NATO
ALLIED SPECIAL OPERATIONS FORCES COMMAND

NATO Special Operations Medical Leader Handbook

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ALLIED SPECIAL OPERATIONS FORCES COMMAND

COMMANDEMENT ALLIÉ DES FORCES
D'OPÉRATIONS SPÉCIALES

RUE CLARK, BLDG 915
7010, SHAPE BELGIUM

File Ref:	SOFCOMJMED/KF/24-SUN1493	**Tel:**	+32 (0)65 44 4520 (POC)
		Tel:	+32 (0)65 44 8259 (Registry)
Date:	30 July 2024	**Email:**	nshqregistry@sofcom.nato.int

SOFCOM PUBLICATION

NATO SPECIAL OPERATIONS MEDICAL LEADERS HANDBOOK

1. Status. This publication supersedes the NATO Special Operations Medical Leaders Handbook dated July 2016.

2. Purpose. The handbook is a reference for medical planning and operational support to SOF operations. It is a tool for developing a common understanding of medical practices, implementation, roles, responsibilities and procedures within the joint operational construct.

3. Applicability. This handbook is for SOCC framework nations, SOF troop contributing nations, special operations medical leaders, SOF medical personnel, conventional medical support leaders involved in the deployment and support of SOF personnel. This handbook highlights best practises, is informative rather than authoritative, and does not supersede extant national doctrine. This publication is a baseline document and resource for NATO special operations forces.

4. Proponent. The proponent for this publication is the SOFCOM Medical Advisor (MEDAD) and Joint Medical Directorate (JMED).

5. Publication Updates. This publication will be reviewed regularly by the proponent and updated as needed. Suggestions for updates will be directed to the proponent.

6. Distribution. This publication will not be reproduced, stored in a retrieval system, adapted or transmitted in any form for commercial use without prior written permission of Allied SOFCOM.

7. POC. The SOFCOM point of contact for this publication is Mr. Kevin Fish, CIV, USA at +32 65 44 8272 or kevin.fish@sofcom.nato.int

Antonio M. Fletcher
Lieutenant General, USA Army
Commander

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Summary/Record of Changes

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Preface

Context

1. NATO Comprehensive Political Guidance forecasts a global environment of change: "…it is and will be complex and global, and subject to unforeseeable developments."[1] The current and expected future global security environment presents a complex environment with irregular and unconventional threats that possess the potential to undermine international stability. Special Operations Forces (SOF) provide an inherently agile capability ideally suited to respond to specific situations within this dynamic irregular environment.

2. Recent NATO operations have demonstrated the synergistic effects of integrated conventional forces and SOF at the strategic, operational, and tactical levels across the operational continuum. Special operations differ from conventional operations in degree of physical and political risk, operational techniques, and modalities of employment. SOF operations are often conducted independently or in conjunction with conventional forces. Political-military considerations often shape SOF operations requiring discreet, covert, or low visibility techniques that may include operations with and through indigenous forces.

Scope

3. This document is intended for medical and non-medical personnel who provide or plan for medical support to SOF missions. This publication focuses on a variety of medical subjects and medical support requirements that are unique to the nature of special operations missions.

Purpose

4. SOF elements by nature are small, agile, highly adaptable forces. SOF must be created over time; they cannot be mass produced or assimilated from scratch after a sentinel event. As a high readiness force, SOF personnel are specially selected, equipped, and trained to achieve military strategic or operational objectives by unconventional military means in hostile, denied, or politically sensitive areas. Therefore, these individuals must be physically strong and mentally resilient to conduct such complex operations.

5. Effective health service support (HSS) for NATO SOF operations is fundamental to our mission success. SOF HSS is characterized by an austere structure and a limited number of personnel with enhanced medical skills. SOF force health protection (FHP) includes the prevention of disease, rapid treatment of the infirm, wounded, or injured, medical evacuation, and the eventual recovery and/or return to duty of NATO SOF's best. The provision of appropriate and visible medical support demonstrates military resolve.

[1] Endorsed by NATO Heads of State and Government, Riga, Latvia, 29 Nov 06.

Application

6. Current NATO medical doctrine and policy address the need for standardization and interoperability requirements of SOF medicine as well as the need for broadened medical and military education and training of deployable personnel. The disciplines of military and civilian medicine are two of the most closely aligned areas of military-civilian interaction, particularly in the areas of medical law and clinical training. This military-civilian relationship and the highly specialized aspects of SOF military medicine led to the requirement for specialized SOF medical doctrine. SOF HSS will operate within the framework of NATO combat service support and HSS structures and be compatible with NATO's Allied (joint) medical doctrine as well as logistic doctrine. At all levels, NATO SOF medical doctrine will derive from the specific medical principles and policies.

7. In Jan 2016, the Supreme Allied Commander Europe (SACEUR) appointed the director special operations (DSO) as the requirements authority for the SOF discipline and the NATO Special Operations University (NSOU) as the Department Head 2. The purpose of this handbook is to establish common definitions of NATO SOF medical capabilities and provide guidance to promote the highest quality evidence-based healthcare within NATO SOF. It can be used at any level as a reference and fits within the existing hierarchy of NATO Allied Special Operations Forces Command (SOFCOM) publications as shown in Figure 0.1.

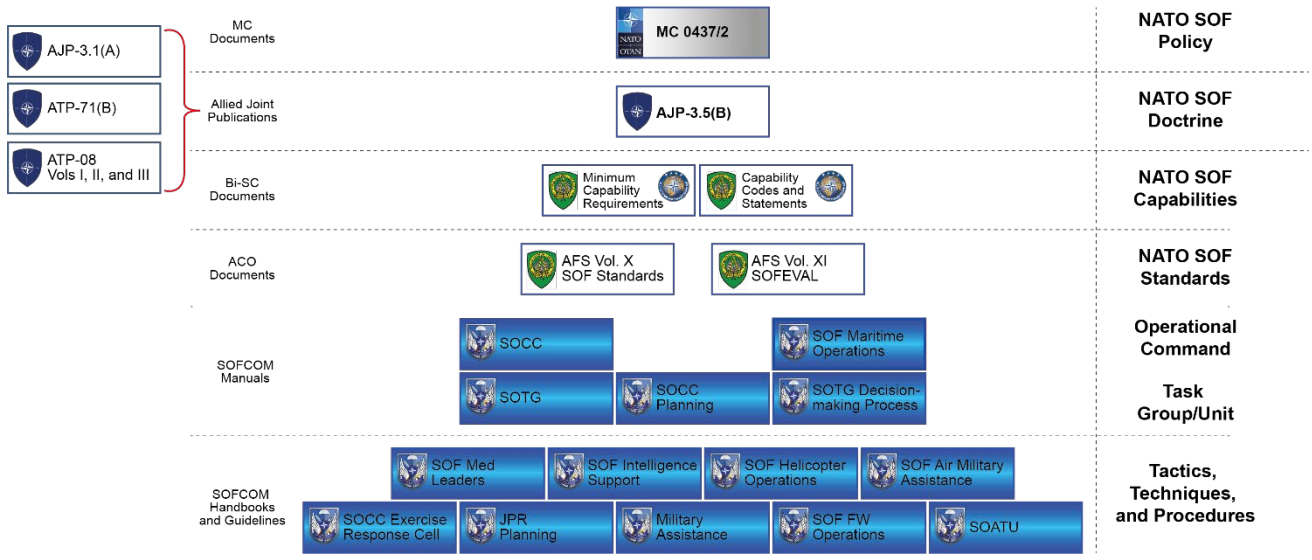

Figure 0.1 – SOFCOM Documents Hierarchy

Chapter 1 – NATO Special Operations Medical Treatment Principles and Capabilities

Section 1 – NATO principles of military medical support

1.1 The underlying principles of military medical support are consistent regardless of the operating environment or the supported capability. The fundamental principles of timely medical treatment applied with continuity throughout the treatment and evacuation chain, creating a compatible medical support system that is able to contribute to a multinational medical support solution, should underpin any analysis of military medical support.

1.2 MC 0326 *NATO Principles and Policies of Medical Support* outlines the NATO principles of operational medical support and presents the NATO medical polices that are derived from them. Military medical support is able to support the full spectrum of conflict from crisis prevention in peacetime military engagement to peace support operations and combat operations.

1.3 AJP 4.10 *Allied Joint Doctrine for Medical Support* depicts the following principles.

a. Medical support is to be provided in compliance with humanitarian, ethical, and legal standards such as the Law of Armed Conflict/Law of War, the Geneva Conventions and the Oslo Guidelines published by the United Nations Office for the coordination of humanitarian affairs (OCHA) but also with the respective national regulations for both the military and the clinical profession.

b. Emergency care of acute life-threatening conditions should not be denied within the capability/capacity of the medical resources deployed.

c. Medical confidentiality is to be ensured; sensitive clinical information is not to be communicated to any individual or organization that does not have a medical need-to-know.

d. Medical support is to be provided under the primacy of clinical need.

e. Medical support should always strive to achieve a standard of care equating to internationally accepted best medical practice.

f. Continuity of care should be ensured from lower to higher levels of care.

g. Timeliness of treatment should be ensured according to clinical evidence.

h. Patient welfare should always be ensured.

i. Medical support should be based on cooperation of all parties involved.

j. Medical support should be compatible. Medical forces should be prepared, equipped, trained, and ready for deployment as the forces they support.

Section 2 – NATO special operations

1.4 Special operations are defined as “military activities conducted by specially designated, organized, trained, and equipped forces using distinct techniques and modes of employment. These activities may be conducted across the full range of military operations, independently or with conventional forces. Politico-military considerations may require clandestine operations and the acceptance of a degree of political or military risk not associated with operations by conventional forces. Special operations create strategic or operational level effects or are executed where significant political risk exists”.

Section 3 – Difference from medical support to conventional operations

1.5 The nature of special operations missions often requires small, highly skilled, self-contained elements that are capable of operating on short notice in remote and hostile locations in all geographic environments, for prolonged time periods, following insertion by land, air, or water. The requirements to provide medical support in this context differ significantly from those required to support conventional operations.

1.6 Special operations medical capabilities are required to support special operations, due to the following characteristics.

a. They must be maintained at high states of readiness and be rapidly deployable.

b. They are required to operate independently in remote and hostile environments, with additional training enabling them to adapt quickly and easily to a variety of adversary and environmental threats and changing situations, at extended ranges from their bases.

c. They are light, agile, mobile, and able to use a variety of assets to insert by land, air, or water.

d. They are able to maintain a low profile to support clandestine or discreet missions.

Section 4 – Treatment capabilities and organization in support of special operations

1.7 To provide immediate medical care when conducting high risk or austere operations in remote locations, advanced treatment capabilities need to be integrated at the lowest level of SOF operational elements.

1.8 All SOF operators and all non-operators deploying with or in support of SOF units must be medically trained according to SOFCOM (formerly NSHQ) Directive 75-001.

1.9 A special operations task unit (SOTU) must have at least one NATO special operations combat medic (NSOCM) or NATO special operations medical technician (NSOMT). The availability of NSOCMs/NSOMTs may be a key factor in a SOTU’s operational status. Depending

on the type of mission, some SOF units may require two NSOCMs/NSOMTs within a single SOTU. The availability of more than one NSOCM/NSOMT within a SOTU may be a deciding factor in determining whether a SOTU is capable of split-team operations.

1.10 Depending on the situation, a special operations task group (SOTG) or a large SOTU may have personnel in a primarily medical support role, which may include physicians, physician assistants, nurses, NSOCMs, and/or NSOMTs, capable of performing pre-hospital acute care at either a static location or as part of an en route care capability (Role 1 capability).

1.11 A SOTG should consider the medical support requirements to react to a chemical, biological, radiological, nuclear and explosives (CBRNE) event.

1.12 In addition to the acute treatment priorities of a deployed task force, and depending on the operational situation, a SOF medical support system may need to include a range of medical specialties such as nurses, dentists, veterinarians, psychiatrists, psychologists, and physical therapists, etc.

1.13 A SOTG or special operations component command (SOCC) may have an attached special operations surgical team (SOST) to mitigate medical risk, especially when operating outside recommended timelines. Depending on the type of operation, the size of forces employed, and the organizational structure, a SOST may rely on lower-level medical care capabilities (i.e. personnel from the organic Role 1 capability and/or NSOCMs and/or NSOMTs) to assist in preparing, treating, and transporting patients, especially in a multiple-casualty scenario.

1.14 For levels of care beyond the capabilities found within the initial surgical capability, conventional medical treatment capabilities, host nation (HN), or national civilian health care systems could be included in the medical plan.

1.15 Medical and surgical treatment capabilities (other than NSOCMs/NSOMTs) in support of special operations can either be organic, attached, or in support to a SOTG. When attached or in support, they can either be dedicated to SOF or be a dual-use capability, trained to support special operations in addition to conventional forces.

Section 5 – Casualty movement capabilities and organization in support of special operations

1.16 The seriously injured or ill casualty must be evacuated as soon as possible to the most appropriate facility which may not necessarily be the nearest.

1.17 Casualty movement may occur under different tactical circumstances.

a. As a separate evacuation mission while the main force continues tactical operations.

b. Along with the main force following mission abort due to the requirement to evacuate one or more casualties.

c. Along with the main force as it exfiltrates from the objective after completion of the action at the objective.

1.18 Casualties can be moved from the battlefield to a higher level of care by any ground, air, or maritime platform able to transport personnel. SOF typically do not have an organic, dedicated medical evacuation (MEDEVAC) capability. Often the use of SOF tactical platforms will be required to conduct evacuation to medical treatment facilities within acceptable timelines. SOF ground, air, and maritime waterborne and amphibious tactical platforms should routinely carry medical kits and evacuation equipment without having to rely on medical kits carried by SOF providers.

1.19 Specific to SOF operations, the most important considerations are the ability to move casualties from a hostile and austere tactical environment to a more secure location capable of providing advanced medical care, and the availability of appropriate en route care (CASEVAC with Qualified Medical Escort as outlined in Ref AmedP 4.13). This will often require the use of armed and protected tactical platforms.

1.20 When conducting casualty movement, additional medical personnel should arrive with the evacuation asset, if possible. While medical personnel are often part of the SOF operation, certain situations may limit their ability to assist with evacuation.

a. The medical personnel may be among the casualties.

b. The medical personnel may need to continue the unit’s mission and be unavailable to escort the casualty.

c. The medical personnel may have been temporarily separated and may not have been at the point of injury.

1.21 The continuum of care must be maintained throughout evacuation. Casualties taken initially to a forward surgical facility with only a limited holding capability (such as a SOST) will usually necessitate subsequent evacuation to a more capable facility before evacuation to definitive care. This transfer may be necessary within a few hours of surgery, depending on the condition of the patient and other circumstances, particularly intensive care capability and capacity as well as the security environment. If no separate critical care transportation personnel are available, a SOST may have to provide en route critical care for patients being moved to a higher echelon surgical facility, following damage control surgery at a forward location.

1.22 Evacuation of casualties will be coordinated by the medical cell inside the SOCC joint operations centre (JOC) and within the operational-level headquarters Combined JOC.

1.23 SOTUs may incorporate integral tactical rescue capabilities when the mission dictates. While not a purely medical capability, tactical rescue is an essential individual and team skill required to extract casualties.

Section 6 – SOF leaders casualty response capabilities

1.24 The occurrence of a casualty during special operations is not an isolated medical issue, but a tactical-medical problem in which there may be a direct conflict between what is best for the casualty and what is best for the mission. SOF leaders at all levels should be educated on the operational consequences of casualties and how to manage such events. Realistic leader-directed casualty battle drills should be embedded into SOF unit tactics and tactical training exercises.

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Chapter 2 – NATO SOF Medical Staff Responsibilities, Competencies, and Tasks

Section 1 – SOF medical command and control

2.1 Horizontal and vertical communication. As a general rule, every level of command will collaborate and coordinate their operational plans and medical support plans with the next higher-level command. SOCC Joint Medical Directorate (JMED) will coordinate and synchronize planning and integrate SOF medical support plans into joint task force (JTF) medical support, within operational security limitations. JTF must have sufficient understanding of SOF medical capabilities, how they are tailored to mission requirements, medical roles and responsibilities, and operations security (OPSEC) considerations (at all levels) to support patient evacuation.

Section 2 – Roles and responsibilities

2.2 Joint forces command (JFC) JMED is responsible for the overall Medical Support Plan (Annex QQ to the operations plan (OPLAN)), ensures medical command and control and information management throughout the joint operational area (JOA), and assists the SOCC in meeting medical support requirements.

2.3 SOCC JMED develops a medical support plan based on the JFC Medical Support Plan. Coordinates MEDEVAC to support the SOTGs. Assists the SOTGs in meeting their medical support requirements. Additionally, the SOCC JMED is responsible for the following:

a. SOCC JMED directly coordinates horizontally with component command JMEDs to synchronize and coordinate medical support to SOF land, air, or maritime operations.

b. SOCC JMED coordinates with SOTGs—SOCC JMED must be aware of the SOTG's medical support plan. SOTG medical support gaps are communicated and coordinated with the SOCC JMED.

c. SOCC JMED communicates and synchronizes with the military treatment facilities and theatre patient evacuation coordination cell (PECC) for (awareness of) medical support planning and patient status reporting and tracking within OPSEC limitations.

2.4 SOTG medical advisor (MEDAD)/JMED develops the medical support plan based on the SOCC Medical Support Plan, coordinates and synchronizes medical support for SOTUs.

2.5 SOTU medical personnel develops the tactical medical plan for specific missions or tasks in close coordination with the SOTG.

Section 3 – The medical advisor

2.6 The MEDAD is usually located within a headquarters as a key member of the command group or special staff. The MEDAD is responsible for providing timely medical advice to the commander in addition to ensuring that the commander and the commander's staff are properly

aware of the health and medical implications their actions and decisions might have as well as of any health-related issues affecting the force or the operation. Direct access to the commander by the MEDAD is essential to assure that all health and medical support related matters requiring the commander`s attention, decision, or action, are addressed in a timely manner. The MEDAD should be supported by the JMED section.

2.7 The MEDAD is responsible for:

a. Deployment health surveillance and force health protection.

b. Planning, implementation, management, and tracking of all medical training.

c. Ensuring proper credentialing for all medical, dental, and veterinary personnel as well as NSOCMs and NSOMTs within the headquarters (HQ) and subordinate SOF units.

d. Defining and monitoring standards for medical standard operating procedures (SOPs) and tactics, techniques, and procedures (TTP).

e. Oversight and validation of SOF medical exercises.

f. Oversight of medical logistics and equipment.

g. Reviewing and revising requirements according to feedback from higher HQ and subordinate units.

h. Ensuring physician oversight to human performance efforts, especially in areas concerning health and medical readiness.

Section 4 – The medical director

2.8 The medical director (MEDDIR) serves as the chief JMED. The MEDDIR maintains situational awareness of common operational picture, medical support, and medical evacuation assets. Given the complexity of SOF missions in major combat operations (MCOs) and the challenges providing medical support, the MEDDIR must be integrated into all stages of planning at all times. The MEDDIR reports to the MEDAD for all medical issues and can assume the role of MEDAD should one not be available.

2.9 The MEDDIR’s responsibilities mirror those of the MEDAD listed in 2.7.

Section 5 – The JMED section

2.10 The JMED section acts as the executing body of the medical organization supporting joint operations. It is understood that some nations do not possess dedicated medical planners and rely on medical providers such as physicians, physician assistants, and nurses to execute various medical functions. Wherever feasible, both services should be integrated in the JMED. For

example, if the MEDAD is a physician, the JMED chief should be a medical planner. This allows for mutual complementation of different skillsets. The JMED section requires the following functions to accomplish all medical support tasks.

2.11 The JMED may consist of the following specialties.

a. Operations and planning officer (day/night).

b. Operations and planning NCO (day/night).

c. Medical logistics officer/NCO.

d. Preventive medicine officer/NCO.

e. Others.

2.12 For MCOs, it is not desirable to have individuals assuming multiple functions.

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Chapter 3 – NATO SOF Medical Simulation and Training

Section 1 – General considerations

3.1 SOF medical curriculum should focus on medical skills acquisition and include training scenarios that require collaboration and coordination between medical support elements, medical providers, SOF operators, and SOF commanders. This curriculum should provide enough foundational knowledge and expertise for rational judgement as to when/when not, at what level, and why certain skills are applied in patient care.

3.2 Instructor qualifications should include the special operations medical instructor development course or similarly recognized medical simulation instructor course.

3.3 SOF medical curriculum should enhance the SOF medical provider's skills, as well as SOF operators' medical skills. Combat experience has proven that often it is the operator, and not the NSOCM/NSOMT who must provide initial lifesaving interventions.

3.4 SOF combat medical simulation should use modern medical simulation principles, including adult learning methods and blended learning techniques to optimize educational objectives.

3.5 Educational goals and interoperability should be maximized through collaborative efforts between member states, providing cost savings to participating nations, investing in similar combat medical simulator equipment and technology to increase buying power and lower unit purchase price.

3.6 Numerous types of simulator products currently exist. At present, there is no single simulation product that meets all SOF medical training objectives. SOF training programmes should use a combination of different training methods to include task trainers, manikins, high fidelity patient simulators, live actors, or live patient role models, virtual reality, and augmented reality to best meet the desired training objectives.

3.7 Simulation platforms should be chosen to best meet the needs and training objectives. Factors to consider include cost maintenance, time, weather, and space utilization.

3.8 Additional research is required to determine the validity of the use of various simulators in student learning, performance, and measurement of effectiveness of these techniques to drive favourable patient outcomes.

3.9 Current simulator technology has not progressed to the point of effectively replacing clinical rotations for the diagnostic and hands-on experience that is usually gained while working with human patients. These experiences provide the essential skills required of SOF medical providers.

3.10 Simulators provide a tool to bridge the gap between hands-on experience with live patients and didactic classroom instruction.

3.11 Alliance SOF combat medical simulation expertise should be promoted to augment national training programmes.

Section 2 – Live tissue training

3.12 Animal role models for essential skills required of SOF medical providers. The utilization of animal role models is subject to national laws, regulations, and policy.

3.13 Live tissue training is considered by some to be the most useful simulation for training in the haemostasis of traumatic injuries. However, these programmes are expensive, repetitive training is impractical, and ethical issues regarding the use of live animals have gained intense focus. These factors limit the conduct of live tissue training programmes. Other methods, such as cadaver training, virtual reality, and bench model training, are less suitable for training in haemostatic skills because of decreased reality or a total lack of bleeding.

Section 3 – Cadaver training

3.14 A cadaver laboratory is a laboratory that uses frozen cadavers for hands-on training, education, and development of new surgical techniques. Cadaver laboratories provide a real lifelike experience where medical professionals and students, alike, can advance their understanding of human anatomy and physiology in addition to enhancing their practical skills, by exploring and working on human specimens.

3.15 Simulation training is essential for learning a variety of skills in medical training. Concerns for patient safety and super-specialization have increased the need for simulation-based training. Simulation training for haemostasis in trauma surgery is especially desired because haemostasis is critical to save severely injured patients and there are limited opportunities for surgeons to learn the skills needed to treat traumatically injured patients in clinical practice. The number of surgical procedures performed by trainees has been decreasing with advancements in non-operative management. Various simulation courses are conducted around the world, in part to make up for limited real-life experience.

3.16 Ex-vivo tissue can be used for simulation training for technical skills. It is generally considered to have mid-level fidelity, is financially reasonable, and is conducive to repetitive training. We previously conducted a pilot study in the use of a circulation pump for ex-vivo training in trauma surgery, with subjective evaluation. The pump mimics circulation and appears similar to live tissue. However, objective assessment of this method has not been conducted.

Chapter 4 – NATO SOF Medical Planning

Section 1 – The scope of NATO medical planning

4.1 Medical planning within NATO encompasses different processes of identifying, defining, designing, and acquiring all medical support capabilities needed to meet the Alliance mission and force structure requirements. Medical planning contributes to defence planning and operations planning in accordance with strategic political-military direction. The NATO defence planning process (NDPP) provides the framework within which national and Alliance defence planning activities can be harmonized to meet agreed targets in the most effective way. It aims to facilitate the timely identification, development, and delivery of the necessary range of forces—forces that are interoperable and adequately prepared, equipped, trained, and supported to meet the Alliance's level of ambition as well as the associated military and non-military capabilities to undertake the Alliance's full spectrum of missions.

4.2 The Committee of Chiefs of Medical Services (COMEDS) is responsible for the medical contribution to the overall defence planning effort with the international military staff (IMS) medical advisor being the leader of the NATO defence planning medical task force. The Allied Command Transformation Medical Branch provides guidance on all military medical aspects of the defence planning process, while the ACO medical staff leads the 'gap' analysis based on the offers of the nations and the outcome of the scenarios as well as on the military aspects of civil emergency planning and on nuclear planning.

4.3 The NATO operations planning process (OPP) is guided by AJP-5 *Allied Joint Doctrine for the Planning of Operations* and by ACO *Comprehensive Operations Planning Directive* (COPD). AJP-5 describes how planning activities and processes are integrated and coordinated to support decision-making and produce plans, orders, and directives for all types of operations. The COPD describes the operations planning process from the strategic to the tactical level. It provides the standard structure and content of OPLANs and guidance on the conduct and methods of planning, as well as on identifying the factors to be considered.

4.4 The medical contribution to operations planning is twofold. On one hand, it is the input of medical expertise to the joint operations planning process. On the other, it is the development of a medical concept and a medical support plan for the operation. The medical support plan should comprise all relevant information about how medical support will be conducted on the operation. It will usually form an annex (QQ) within the commander's overall operations plan and can be updated or replaced as the operation proceeds to ensure it adapts to changing circumstances and requirements. Early consideration of medical aspects, particularly of medical intelligence and information (MI2) and FHP at each stage of planning is essential to ensure a comprehensive analysis of the mission and development of a plan that can be supported medically.

4.5 General guidance on medical planning within NATO can be found in AJP 4.10 – *Allied Joint Doctrine for Medical Support* as well as AJMedP-1 – *Allied Joint Medical Planning Doctrine*. Knowledge of the NATO operations planning process (AJP-5 *Allied Joint Doctrine for the Planning of Operations*) and the ACO COPD is essential for the MEDAD to participate in all planning processes.

Section 2 – Principles of NATO SOF medical planning

4.6 Medical support to SOF must be flexible, precise, agile, and speedy like the forces they support. A SOF operational plan is best when it maximizes the six principles of SOF: surprise, speed, security, purpose, repetition, and simplicity. A SOF plan is most likely to be successful if it is a simple plan, carefully conceived, repeatedly and realistically rehearsed, and executed with surprise, speed, and purpose. When considering the type and scope of medical support for such operations, medical planners must create plans that meet the most serious threats without diminishing the principles of SOF operations. Trained SOF MEDADs must present commanders the risks and benefits of various medical support packages to determine where risk will be assumed in SOF operations.

4.7 The principles for SOF medical support are:

a. Simplicity. Simple, effective treatments; advanced scope of practice.

b. Surprise. Embedded with force.

c. Security. OPSEC sensitive but coordinated with higher echelons.

d. Purpose. Save lives and enhance mission success.

e. Repetition. Practised support (right time, right place, right treatment).

f. Speed. Moving at the speed of tactical elements.

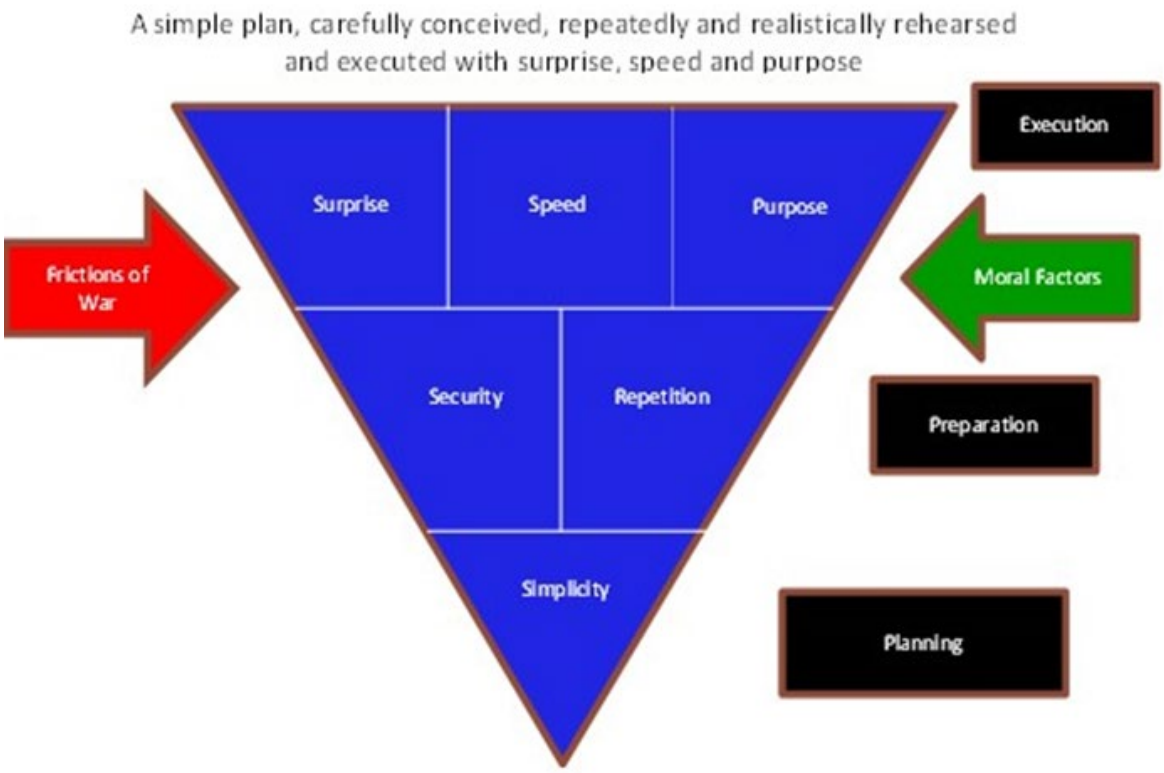

Figure 4.1 – SOF Medical Support Principles

Section 3 – SOF medical planning cycle

4.8 The SOF medical planning cycle can assist the medical planner in execution of current and future medical plans in support of the SOF mission as well as using it for the lessons learned process for pervious SOF missions. Integrating the SOF principles, the seven pillars, and the medical planning cycle will implement a well-structured medical plan. References A through D will also aid medical planners to execute the medical plan and present the medical plan during the orders process.

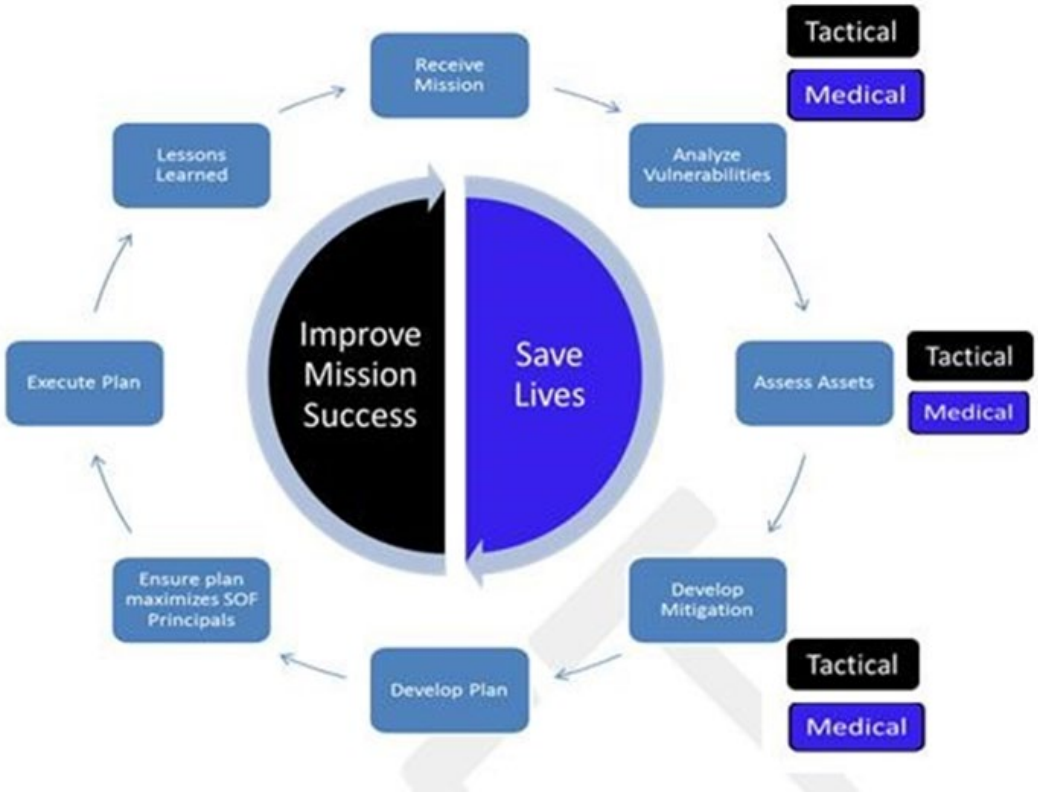

Figure 4.2 – SOF Medical Planning Cycle

Section 4 – Medical planning considerations in support of NATO SOF

4.9 **SOF principal tasks**. Planning for medical support to SOF must take into account specific factors that may be highly variable between the different SOF principal tasks, such as:

a. **Military assistance (MA)**. MA is a broad category of measures and activities conducted by SOF that support, enable, and influence critical friendly assets through training, advising, mentoring, partnering, or the conduct of combined and other operations. Planning consideration for medical support to MA may include the considerations for both special reconnaissance (SR) and direction action (DA) (see below), since these may be implied tasks in any MA mission. In addition, medical support to the assisted HN security forces or local guerrilla forces, as well as to their relatives or even their extended communities, should usually be planned for. Furthermore, health service support capability development is often an important task within an MA mission. Depending on the mission statement and the medical rules of engagement (MROE), it can also include medical support to local populations.

b. **Special reconnaissance (SR).** Reconnaissance and surveillance activities conducted as a special operation in, but not limited to, hostile, denied, or diplomatically and/or politically sensitive environments to collect or verify information of strategic or operational significance, led by SOF using distinct techniques and modes of employment. Medical risks associated with SR missions are mainly related to environmental conditions prevalent in the often-austere operational area, as well as to the physiological effects of prolonged inactivity during extended surveillance in confined spaces. Medically supporting these missions is limited by what the medical provider can carry and the limited ability to communicate with higher medical support. To be successful, SOF units require special medical protocols for their providers and operators that may extend above the usual medical authorities and skills of their conventional counterparts. Leveraging distance and telemedicine capabilities can be useful in supporting these missions.

c. **Direct action (DA).** DA is a short-duration strike or other small scale offensive action by SOF to seize, destroy, capture, recover, or inflict damage to achieve specific, well-defined, and often time-sensitive results. Medical risks associated with DA missions are mainly related to combat trauma (penetrating injuries, blast injuries, orthopaedic injuries) warranting the need for timely access to tactical combat casualty care (TCCC), damage control resuscitation (DCR), and damage control surgery (DCS) as well as continuous integrated casualty response training prior to the mission. In addition to medical support to the SOF element conducting the operation, treatment of wounded non-combatants and adversary combatants may have to be planned for.

4.10 Medical threat assessment.

a. SOF frequently operate in remote, austere areas and may, therefore, be exposed to health risks not normally seen in other areas of the JOA. This factor, coupled to the fact that SOF are held on short response times, routinely require proactive planning for the provision of robust preventive medicine measures, such as immunizations against a wide variety of potential diseases.

b. Effects of adversary tactics and associated weapons-munitions systems used affect planning of medical assets in terms of capabilities required to cope with likely injuries and in terms of recognizing the need for protected evacuation assets. In addition, SOF medical plans should anticipate the fact that changes in adversary tactics may require rapid changes in SOF medical capabilities, including the fielding of new and/or additional medical equipment and supplies to the lowest levels.

4.11 Types of environment.

a. **Permissive environment.** Any mission must anticipate penetrating and blunt trauma and the medical equipment should reflect this. However, the use of local medical facilities can be considered. The friendly environment also allows you to consider more evacuation platforms. The medical planner should ensure the availability of and appropriate authority to access HN evacuation assets while still maintaining operational security.

b. **Semi- and non-permissive environments.** In the semi-hostile and hostile areas of operation (AOOs), the inclusion of well-trained organic medical assets with the main force is vital. These organic forces should have close proximity to the supported unit to enhance the capability. The other consideration should be establishing the treatment and stabilization area on the infiltration and exfiltration platform. A higher-level of care facility should be identified or established in close proximity to the mission.

4.12 **Medical operations to support local populations.** When planning to provide medical care to civilians or support/develop local medical capabilities (medical engagements), SOF planners should ensure that these medical operations support SOCC and JFC overall objectives and do not undermine them through medical and tactical unintended consequences. In counter-insurgency operations, medical programmes are valuable tools when properly aligned with operational objectives. Efforts should fully integrate HN providers and officials, to promote the capacity of the HN government, and should lead to greater self-sufficiency. Medical seminars, as a product of a medical engagement, provide education, thereby promoting self-reliance and improving the sustainability of medical interventions. They may forge relationships and promote interoperability through collaboration between local medical providers, governmental leaders, HN forces, and NATO forces. While the benefit of continued relationships with an AOO is difficult to quantify, positive impacts of successful medical programmes usually result in better access to information provided by the local population, eventually leading to an increase in security.

4.13 **Casualty estimates.** Since special operations, during which contact with the adversary is sought, are routinely conducted using surprise, and SOF do not conduct prolonged force-on-force operations, reliable, accurate casualty estimates for the action on the objective are not only infeasible, but also totally inappropriate.

4.14 **Evacuation timelines.** NATO aims to provide appropriate life, limb, and functions saving treatment within specific clinical timelines. This has become known as the 10-1-2(+2) timeline. Due to the high medical risk associated with many SOF missions, medical planning should aim for the 0-30-60 timeline, whenever feasible. However, these timelines cannot always be held. Careful strategic and operational planning is required to mitigate the risk associated with prolonged evacuation times.

4.15 **SOST employment criteria.** Since these highly specialized assets are a scarce resource, their use should be planned for those operations that carry a significant risk of trauma casualties or difficult to ascertain risks, in the absence of more robust conventional medical treatment facilities to which casualties can be evacuated within established evacuation timelines.

4.16 **Redundancy of evacuation assets.** Evacuation plans should include the use of alternate evacuation assets. Air evacuation should never be the only evacuation option being planned for.

4.17 **Medical logistics.** SOF medical logistics personnel should plan for and ensure that adequate stock levels of medical supplies are maintained, and that resupply of medical items can be conducted when needed. Special consideration should be given to the provision of temperature-sensitive blood and blood components far forward, to be used by the lowest-level SOF operational elements.

4.18 **OPSEC.**

a. The need for OPSEC often requires access restrictions on medical planning information to other component or higher-level conventional medical planners. The SOF medical planners should provide only sufficient information to ensure the required conventional medical support is in place, with the least opportunity of mission compromise.

b. Regardless of the other criteria that determine the requirement to use SOST, there may be cases where OPSEC requires their employment instead of a readily available conventional medical treatment facility.

4.19 **Personal security (PERSEC).** Selected missions may have a requirement to safeguard the patient's identity in order not to compromise a SOF unit's presence and jeopardize its mission. In those cases, alias patient tracking systems may have to be used to maintain accountability of injured SOF personnel inside the conventional medical system.

4.20 **Friendly forces areas of consideration.** Coalition SOF may operate very differently from the forces of individual nations, and consideration should be given to areas such as:

a. Rules of engagement (ROE), MROE, medical legal differences, aviation assets, communications interoperability of medical equipment and personnel, etc.

b. Medical readiness of personnel for deployment (health conditions, chronic medications, vaccinations, prophylaxis, etc.).

c. Medical equipment (individual, collective, sets/kits/outfits, etc.).

d. Pre-deployment site survey (PDSS) medical issues (force health protection, MEDEVAC, higher echelons of care, Class VIII, etc.).

e. Medical intelligence preparation of the battlefield (IPB) issues.

4.21 **HN security forces areas of consideration.**

a. Existing military HSS infrastructure for initial stabilization, evacuation, and definitive treatment.

b. Medical personnel (dedicated or additional duty, level of proficiency – medic, physician, etc.).

c. Medical training (individual, collective, for both medical and non-medical personnel).

d. Medical logistics (Class VIII authorized and on hand, acquisition, distribution, resupply).

e. HSS programme development activities (eligibility, appropriateness, affordability, sustainability).

4.22 **HN civilian areas of consideration.**

a. Health demographics (infant mortality, disease incidence, etc.).

b. Public health activities (preventive medicine, veterinary care, water, etc.).

c. Health care infrastructure (facilities, distribution, logistics, etc.).

d. Health care staffing (personnel, education, training, etc.).

e. Health hazard analysis (HHA). Use all available resources and assets to visualize key elements of the HHA, including enemy threat, weapons employed (CBRNE, explosive, etc.), historical casualty numbers, HN systems in place, civilian casualties, disease and non-battle injury (DNBI) issues/rates.

Section 5 – Mission planning and analysis

4.23 Determine specified, implied, and essential tasks.

4.24 Identify available assets and resource shortfalls.

4.25 Establish facts, assumptions, constraints, restraints, and limitations.

4.26 Match all of this with HHA and threat analysis to construct proposed courses of action (COAs).

4.27 What is the AOO?

4.28 What are environmental health risks within the AOO (climate, wildlife, disease) and how are they mitigated?

4.29 What are mission specific health risks and how are they mitigated?

a. Permissive vs. non-permissive environment

b. Enemy forces capabilities and procedures (small arms fire, rocket-propelled grenade, improvised explosive device (IED), chemical, biological, radiological, and nuclear (CBRN))

c. Most dangerous enemy COA.

d. Other location specific health hazards (e.g. instable buildings, industrial sites, difficult terrain, etc.).

e. Evacuation distances/timelines.

4.30 Do all deployed personnel fulfil medical readiness requirements (health status, vaccinations, refresher training)? Are additional preparations required?

4.31 Which organic medical capabilities are available?

a. What kind of medical training and equipment does the assault force have?

b. What organic medical assets are available and what are their capabilities?

c. Is the integration of organic medical assets and the assault force coordinated?

(1) Communication.

(2) Command and control.

(3) Cross-training.

4.32 Which non-organic medical assets are available or can be requested (conventional, Alliance/partner, HN)?

4.33 What limitations in terms of personnel, size, and weight, need to be considered?

4.34 Which evacuation platforms are available and how are they activated?

4.35 What is the expected population at risk?

a. Own forces? Hostages? Partner forces? Prisoners of war/detainees? Local population? Special patient groups (e.g. children, elderly, pregnant)? Service animals?

b. Are respective SOPs/protocols established and is adequate equipment and personnel available?

4.36 Are mass casualty (MASCAL) and triage SOPs feasible for the specific operation or do they need to be adapted?

4.37 Is follow-on care and patient tracking planned and coordinated?

4.38 Is strategic air medical evacuation (STRATAIRMEDEVAC) planned and coordinated?

4.39 Is resupply/maintenance planned and coordinated?

4.40 Have special requirements for blood and controlled substances be considered?

Section 6 – Medical capability building in military assistance operations

4.41 SOF medical support in MA comprises SOF medical engagements (MEs) and SOF military medical partnerships (MMPs). MEs can be seen as a spectrum of medical operations that are aligned with command objectives, improve populace health, enhance medical care, and advance HN capacity. The important aspects of this are aligning these missions with command objectives and using them to improve health of the population. MMPs include medical training, advising, and mentoring by NATO SOF to partnered forces to meet mission objectives, improve capacity, and promote self-sustainability.

4.42 **Basics of NATO SOF medical partnerships.**

a. Medical partnering in SOF operations entails working with a partner force to increase that force's medical capability to conduct medical support. When SOF medical elements engage in medical partnering, some key considerations include the starting capability of the partner force, the logistical supply of that force, HN medical philosophies, laws, and cultural considerations. A common misstep in NATO medical partnering is expecting a partner force to change its cultural or legal practices to conform to the assisting forces medical standards. Another pitfall is training with equipment not common to and not sustainable by the partner force after the SOF element leaves. Thus, medical partnering should be carefully conceived, tailored to the partner force, and be sustainable after the SOF element leaves.

b. Definition: Partnering in SOF operations is defined as SOF medical training, mentoring, and advising of partnered forces that are aligned with command objectives and are conducted to improve medical capacity and promote self-sustainability. For the purpose of this definition, partnering is considered to be with a HN or indigenous force and the conduct of the partnership must be aligned with the commander's intent, which is the fundamental principle.

c. SOF medicines task in MA is to develop a partnering plan that supports the commander's operational objectives and contributes to overall mission success.

d. Evaluating partner capabilities is key to develop an effective and efficient partnering plan. Combined trainings and exercises are an essential to develop an understanding on the current status of medical capabilities and capacities of the partnered unit. This is also highly relevant when developing medical support plans for partnered missions within the MA operations.

e. Besides medical specifics of the supported unit, factors like existing formal and informal hierarchical structures, academic level of students (literacy, prior education, language barriers and interpreter capacity, time availability, cultural differences—including traditional learning styles), and motivations must be assessed and taken into account.

f. There will be differences in the way that the partnered force does business. Every unit has a unique culture of operations that may be influenced by the unit's history and experiences, specifics of political oversight and command and control (C2) structures, or personal leadership to religion, national oversight, chain of command, or personal agendas/visions of key personnel. Inducing change without a deep understanding of these factors will most likely create passive or even active resistance. It is therefore essential to include the partnered force in the planning process to develop a common goal within in framework of commander's intent. Mutual trust and respect are key elements for successful cooperation.

g. The end state for the medical partnership should be well defined prior to the start of mission execution. The level of ambition will be defined by time allotted for the mission, availability of personnel and equipment (considering second and third order effects of redistributing limited resources within the national (military) medical system), and prioritization within the partnered and partnering force. Generally, self-sustainability and strategic impact should be favoured over lighthouse projects (e.g. focusing on a well-equipped TCCC programme for all soldiers plus preventive health measures vs. creating a SOST plus air MEDEVAC capability).

h. As the mission develops, the goal of SOF medical assets is to gradually transfer increasing medical responsibility to the HN. Medical capabilities should be consistent with the operational goals and have achieved a measure of self-sustainability. The degree of self-sustainment will be a measure of the effectiveness of your medical mission.

i. MMPs must possess the ability to effectively evaluate and subsequently train a partnered force to become self-sufficient. Partnered military operations involve complex human social systems that can react very differently to similar occurrences due to cultural, religious, or even regional interpretations. The management of these expectations will be of paramount importance in any MMP.

4.43 **NATO SOF medical engagement.**

a. AD 83-2 addresses some key elements of medical engagement using military forces to guide operational commanders. Some tenets from this document include the concept that medical engagements should be conducted in concert with the HN medical system and should not replace it or diminish its capability in the eyes of the people.

b. Direct care to indigenous populations by SOF units alone should be avoided as this undermines the local government's medical system. Whenever possible, SOF units should seek to partner through the HN health care system to augment, train, and advise local health care capability rather than supplant it.

c. Medical seminars (MEDSEMs), where SOF units assist the local health leadership by, with, and through local health care providers in building capability, is a better means of engaging a population than the traditional medical activity in which SOF medical providers conduct sick call type operations in an area.

d. The MEDSEM concept requires more coordination and planning but reaps better operational outcomes for the commander and better medical benefits for the HN.

e. Another AD 83-2 tenet applicable to SOF is that medical care should never be used as a quid pro quo for information or tactical advantage. While SOF practices can sometimes challenge conventional wisdom, SOF medical care should conform to appropriate medical ethics and standards.

4.44 **Strategic objectives.**

a. Assess medical contributions to MA and align initiatives with command objectives and intent.

b. Develop and use outcome measures for medical engagement/partnership operations.

c. Plan comprehensive medical engagement/partnership strategies for a given operational environment.

d. Design an effective military medical partnership/engagement that will persist for future operations.

4.45 There is a planning model that can be used to support MA operations. It includes proven simple concepts and adheres to immediacy and relevance. The eight steps of planning are:

a. Who?

(1) Number of attendees?

(2) What is the profile of participants?

(3) What is their current level of knowledge and skills?

(4) What is their desired level of knowledge and skills?

b. Why?

(1) Why is this event important to reach commander's intent?

(2) Why are you here?

(3) Why do you need this training?

c. When?

(1) What time of the day is best for the training?

(2) How much time is available for the training?

(3) How long should the sessions be?

(4) How much can be taught?

(5) How much time do I need/have to prepare?

d. Where?

(1) Where to conduct the training: Classroom? Outdoors?

(2) Accessibility?

(3) Security?

(4) Does the training site allow splitting in smaller groups?

(5) Is audio-visual support required and available?

e. What?

(1) What is the content of the course/training?

(2) Are knowledge, skills and attitude addressed?

(3) Is the content based on a needs assessment?

(4) Is the content aligned with the overall objectives?

f. What for?

(1) What are trainees supposed to do/know after the training/course?

(2) Are the learning objectives specific, measurable, obtainable?

g. How?

(1) Organize all aspects of the event.

(2) Develop and communicate clear learning tasks.

(3) Create a detailed plan.

h. So what?

(1) Define and assess learning, transfer, and impact.

(2) Define and assess outcome measures.

4.46 The importance of the “So what?” cannot be understated. It measures outcomes to determine if we succeeded, to assure outcomes align with and contribute to command objectives, to communicate success or failure, and to guide future operations.

4.47 There are two outcome measurements: Measures of performance (MoP) and measures of effectiveness (MoE). Both of these measurements assure alignment with command objectives.

a. MoPs. Answer the question, “How well did we do it”?

(1) How many, how fast, how much is achieved.

(2) How well systems or force elements accomplish their assigned tasks.

(3) Examples: Number of persons trained, number of patients treated, cost sharing.

b. MoEs. Answer the question, “Did we do the right things?” Impact assessment:

(1) Measures how well systems or force elements accomplish their assigned tasks within an operational context.

(2) Examples: Governmental interoperability enhanced, HN providers gain access to population, medical infrastructure improved.

4.48 **Lessons learned from prior MA operations.**

a. If it is easy, you are probably not doing it right!

b. Effective medical engagements require significant commitment. The planning efforts start early.

c. Obtain higher level HN buy-in early. Without HN buy-in, there will not be any sustained MOEs.

d. Maintain momentum. Plans and planning are not the most exciting parts of any operation, but ensuring forward momentum with regards to planning is essential.

e. Ensure everyone knows the mission. For the mission to continue to have strategic impact, all participants must understand the objectives.

f. 45- to 180-day MOEs.

g. By, with, and through…ALWAYS.

h. You do not have to execute an operation to engage a population.

i. Engage multiple times during area prep. It is necessary to perform PDSS, so all know what you are getting into.

j. Good medicine supports good SOF operations.

k. Medical engagement equals knowledge sharing.

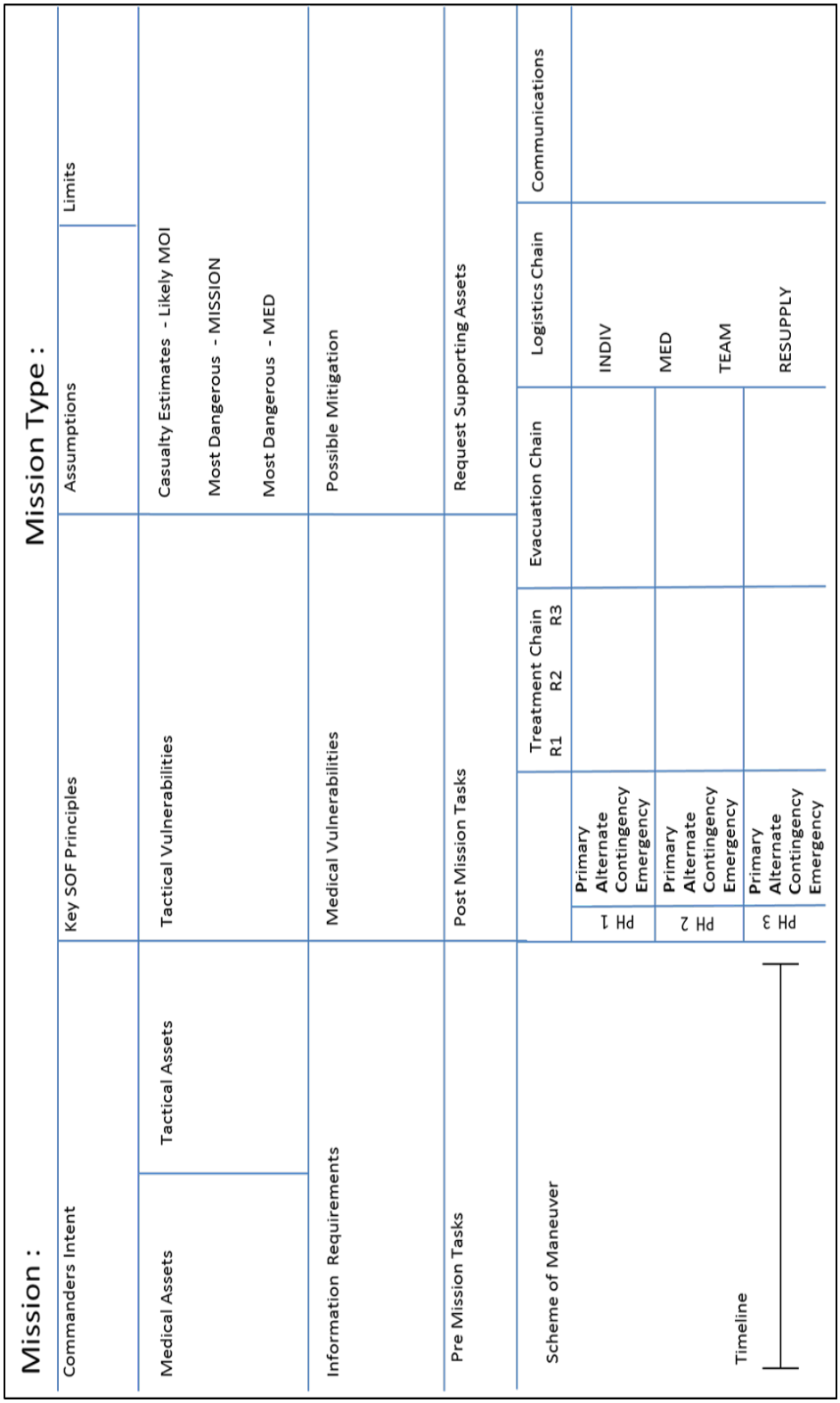

Figure 4.3 – Example Mission Analysis Worksheet

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Chapter 5 – Medical Support to NATO SOF Maritime Operations

Section 1 – The main challenges of maritime SOF missions

5.1 There are three key characteristics of maritime special operations. These aspects pose the most challenge to medically supporting a maritime mission.

a. Task type; ship-to-ship DA task.

b. Environment; amphibious projection from sea to land.

c. Infiltration and exfiltration techniques; subsurface.

Section 2 – General considerations for SOF maritime operations

5.2 Maritime SOF operations are most often joint operations requiring close cooperation and deconfliction with Navy medical planers to ensure the medical needs of the SOMTG are properly addressed.

5.3 Resources aboard military vessels are limited. It is highly likely that SOF will compete with other entities for resources like personnel, cargo space, working space, transport capacity, or resupply. Often the SOF medical capabilities are seen as sparable, especially when there is already a medical capability.

5.4 The NATO maritime medical planning matrix (ref. AJMedP-1, Edition A, version 1, Sept 2018) provides guidelines that enable commanders to ensure that an appropriate level of medical support is available for any mission. The matrix includes, among other things, the intensity and the nature of the operation and gives the planner a score, which tells what level of medical facility should be attached to the deployment.

5.5 Maritime special operations, from underwater tracking to hostage rescue, boarding operations, and amphibious operations in international or coastal waters comprise a significant portion of today's SOF mission set. SOF forces need to be able to provide any of the principal SOF tasks in a maritime environment whether coastal, riverine, or open sea. The operations are characterized be stealth, speed, and precise application of force.

5.6 Maritime operating forces use small, highly flexible, mobile units under, on and from the sea. Medically supporting these operations is complicated by distance, austere environments, and utilization of multiple complex platforms. These variables challenge the principal standards of medical support in tactical medicine.

a. Environmental factors - "The sea is unforgiving to the ill prepared". Maritime operations are especially dependent on environmental factors such as wind, weather, sea state, and current. These conditions affect all phases of maritime SOF missions.

b. Physiology and human factors - The inability of man to survive in the water for an extended period of time without risking hypothermia, exhaustion, and drowning poses an inherent danger to all maritime operations. In preparation all means of training, education, and adequate equipment should be taken to ensure the best possible human performance in maritime missions.

c. Tactical aspects - Maritime SOF operations are “joint” by nature. They often rely on conventional force support including platforms and are likely to be a component of an overall allied campaign. Hence, SOF missions may be a prequel to a conventional joint force mission.

d. Maritime operations will most likely cover a large area of operation with a limited supply chain and limited space for personnel and equipment onboard vessels. Therefore, aspects of medical treatment (scoop and run vs. stay and play, MEDEVAC vs. stabilization, prolonged field care) may be very different from treat and transport operations on land.

Section 3 – Sea to sea operations

5.7 **Surface operations.** The majority of sea-to-sea operations involve DA missions. These tasks range from visit, boarding, search, and seizure (VBSS) to hostage rescue operations. All these missions pose a high risk to the force and have strategic consequences. They rely on rapid achievement of relative superiority as a result of effective approach and boarding during the insertion phase. Each phase of this type of DA mission requires consideration of the vulnerabilities that may adversely affect mission success and/or pose a risk to the health of the force and any hostages. It is likely that a varied medical plan addressing these vulnerabilities is required for each phase of the mission.

5.8 **Pre-mission preparations.** The following key information requirements were identified to support the mission analysis: Environment (weather, water temperature, sea state, currents, visibility).

a. Target details (vessel type, vessel architecture, cargo, organic defensive capabilities) enemy threat characteristics.

b. Hostage characteristics.

c. Friendly force tactical support elements involved (i.e. joint or multinational assets).

d. Potential medical facilities on board target vessel, MEDEVAC landing capabilities, possible casualty collection points.

e. Supporting medical assets afloat/ashore (air MEDEVAC, hyperbaric recompression chamber (RCC), medical facilities).

f. Timelines (MEDEVAC, higher-level medical care).

g. Triage priorities for mission.

h. Contingency plan for medical care.

i. ROE and MROE

5.9 **Mitigation strategies.**

a. **Baseline maritime SOF medical support training.**

(1) TCCC for all operators, advanced providers to maximize skills in small force.

(2) Ensure relevant tactical and medical courses.

(3) Rope rescue/confined space rescue skills.

(4) Use of training platforms.

(5) Rehearse transfer of patients from ship to ship.

(6) Infiltration techniques for medical personnel, dive-specific medical training, container climbing, survival skills, and helicopter dunk training.

(7) CBRN, hazardous material (HAZMAT) and decontamination training.

(8) Medical simulation with realistic environment exposure.

b. **Intelligence sources and utilization.**

(1) SOF Alliance.

(2) NATO SOF Database.

(3) Shared experience.

(4) General information (World Health Organization (WHO), open source) National S2 requests for information (RFIs)).

(5) Coordinate and synchronize through Ops cell.

(6) Gather medical intelligence on available medical treatment facilities (MTFs).

(7) Coordination with receiving MTF until after DA to preserve OPSEC.

(8) SOPs and anticipate changing plans.

(9) Ops liaises with subject matter experts (SMEs).

(10) Receiving medical facility may be staffed by conventional forces, therefore, joint training prior to mission is critical.

(11) Liaise with civilian services (coast guard, ambulance, search and rescue (SAR), etc.).

(12) Coordination between civilian/military facilities, option to reinforce local hospitals with SOF medical personnel.

5.10 **Approach (Insertion/Infiltration).**

a. **Tactical vulnerabilities.**

(1) Insertion platform limitations (space and skills).

(2) Mode of insertion/infiltration (helicopter, boat, surface swimming).

(3) Loss of platforms results in limited space.

(4) Human factors - environmental effects on performance.

(5) Weather/sea conditions/visibility.

(6) Impact of casualty on mission success.

b. **Medical vulnerabilities.**

(1) Environmental conditions (hypothermia, seasickness, exhaustion, dehydration, hazardous marine life, drowning).

(2) Transportation-related trauma (e.g. injury during rigid hull inflatable boat (RHIB) ride, helicopter crash) force size limitations (including limited medical personnel).

(3) Treatment/evacuation on RHIB or rotary-wing platforms.

(4) Exposure of medical equipment to sea water and sun.

c. **Mitigation strategies.**

(1) Environmental exposures – seasickness (conditioning, pharmacology, pre-selection), clothing, personal protective equipment (PPE), education.

(2) Resiliency training.

(3) Nutrition and hydration pre-op vital (including voiding systems).

(4) Sustained operations – leadership, TTP, rest, hydration, and nutrition, speed balls (medical resupply readily available).

(5) Physical training preparation – assessment of needs and outcomes, specific physical programmes for task, performance psychology.

(6) Injury prevention – PPE, ergonomic solutions, education, training.

(7) Pre-stage medical treatment and evac equipment on RHIB/helicopter.

(8) Each operator to carry appropriate individual first aid kit (IFAK).

(9) Use seawater-resistant equipment.

5.11 **On target.**

a. **Tactical vulnerabilities.**

(1) Accident/loss of assault strength.

(2) Compromise prior to board; boarding technique compromised (fast rope, rappelling, climbing ladders).

(3) Number of operators restricted.

(4) Specialist assistance (breaching, search, explosive ordnance disposal (EOD), K9).

(5) Number and location of hostages and enemy.

(6) Time to search/clear large target.

(7) Unreliable communications during clearance.

(8) ID hostage vs. enemy.

b. **Medical vulnerabilities.**

(1) Risk during boarding (falls, blunt trauma/lacerations, drowning).

(2) Enemy action including boarding countermeasures.

(3) Hazards on target vessel and inherent risk of operating on vessel (infrastructure, ship surface conditions—wet, oily, moving platform, confined spaces, heavy metal doors).

(4) Hostage medical condition.

(5) Hostage attitude.

(6) Language.

(7) Legal, cultural, religious, and political considerations in treating casualties.

(8) Access to casualties (confined space rescue).

(9) Internal movement of casualties.

c. **Mitigation strategies.**

(1) IFAK standardized and carried by team personnel.

(2) Task-specific medical and tactical equipment (low volume and lightweight due to space restrictions and target vessel restrictions/obstacles, small flexible extraction tools, rescue belt).

(3) Cross-level additional medical equipment through the team.

(4) Potential escalation of on-target medical capability.

(5) Winch compatibility of equipment including casualty litters.

(6) Interoperable communications to conduct joint operation telemedicine.

(7) Prepared to deliver medical care to military personnel, hostages, and enemy combatants (e.g. cardiac, paediatric, and psychological care).

(8) Prepared for medical care delivery in CBRN environment.

(9) Prioritize preservation, care, and safeguard hostages if hostage rescue operation (HRO) to ensure mission success.

(10) Consider casualty range of age/gender/pre-existing medical conditions.

(11) Complete tactical tasks before medical treatment.

(12) After clear and cover, priority is to assess and manage casualties.

5.12 **Exfiltration/Extraction.**

a. **Tactical vulnerabilities.**

(1) Hasty vs. deliberate.

(2) Mode of transport (helicopter, RHIB).

(3) Multiple/mass casualty situation.

(4) Multiple hostages.

(5) Handover point.

b. **Medical vulnerabilities.**

(1) Urgent extraction of casualties (fire, chemical hazard).

(2) Multiple/mass casualty evacuation.

(3) Critical casualty extraction.

(4) Responsibility division/handover (loss of medical data).

(5) Access to target for extraction (i.e. HLZ).

(6) Moving casualty within vessel.

(7) Cross-load patients (movement of casualty between platforms).

(8) Extended evacuation timeline (delayed access to advanced care).

c. **Mitigation strategies.**

(1) Train and plan for delayed extraction and prolonged casualty care (PCC).

(2) Train operators/medics in technical rescue (e.g. hoist, confined space extraction).

(3) Ensure hoisting equipment is available at all times.

(4) Anticipate and plan for hasty exfiltration/extraction.

(5) Plan for triage given evacuation limitations.

(6) Use ship’s organic evacuation plan if required.

(7) Use vessels of opportunity as an option for evacuation platform.

(8) Shorten the distance between target vessel and mother ship.

(9) Move assets to the target rather than casualties to assets.

(10) Use simple documentation devices and start data collection early in treatment.

(11) Augment evacuation capability by seconding personnel and transport craft from mother ship.

(12) Consider deploying a SOST or special operations resuscitation team (SORT) as proximate to the target vessel (and casualties) as possible.

(13) If practicable, place the SOST on the target vessel to optimize care and increase casualty survival.

(14) If available, use surgical facilities on the mother ship as a receiving facility for casualties and location for the SOST.

(15) Plan and prepare for transfer of casualties from the SOST to an appropriate medical facility for definitive medical and surgical care.

Section 4 – Subsurface operations

5.13 Maritime special operations may use advanced infiltrations/exfiltration skills such as subsurface activity to maintain surprise on approach to a target, or to remain undetected for an approach or a mission. These subsurface activities require individual operator diving and swimming skills and the use of maritime platforms that can support or help transport the individuals under the surface.

5.14 The skills and technology required for subsurface operations is complex and requires specialist training and regular rehearsal. Maritime SOF skills are typically the most perishable, and without frequent and realistic individual and collective training and exercise events, skill fade will result, especially in areas that involve subsurface activities.

5.15 In addition to the mission type and environmental vulnerabilities, the following vulnerabilities and suggested mitigation were highlighted for subsurface components of maritime special operations missions.

5.16 **Specific considerations.**

a. Requirement for dive medicine knowledge and experience with dive profiles and tables.

b. Increased attention to currents, sea state, and water temperature.

5.17 **Tactical vulnerabilities.**

a. Prolonged distances under water.

b. Unforgiving subsurface environment (cold, low visibility, unpredictable currents, tidal changes, hazardous marine life, increased ambient pressure, reliance on breathing systems).

c. Enemy-made subsurface obstacles.

d. Situational fatigue.

e. Equipment failure (closed circuit rebreather).

f. Diving with extra equipment decreases speed and increases air consumption.

g. Limited communication.

h. Possibility of not having everyone reach target.

5.18 **Medical vulnerabilities.**

a. Increased risk of hypothermia, hyperthermia (dry suits), exhaustion, and drowning.

b. Limited capacity to carry medical equipment.

c. Psychological stress of subsurface environment.

d. Increased risk of dehydration, barotrauma, hypoxia, and immersion pulmonary oedema.

e. Rebreather inherent health risks (CO_2 absorbent failure, ingestion of caustic solution).

f. Increased risk of oxygen toxicity, and gas associated disorders as a result of diving.

g. Diving countermeasures (sonar, underwater explosives).

h. Marine life may adversely affect diver health.

5.19 **Mitigation strategies.**

a. Education in diving physiology.

b. Medical engagement during new platform/equipment development.

c. Medical equipment planning and procurement medical/operator trust building.

d. Plan for casualties presenting with hypothermia, exhaustion, gas associated disorders.

e. Access to recompression chamber.

f. Consider pre-positioning a surface rescue medical team.

g. Consider all options for collecting divers/casualties (including submarine).

Section 5 – Sea to land operations

5.20 **Surface operations.** A number of nations identified national strategic intentions to return to an amphibious operations focus after a decade of addressing primarily land conflicts. SOF personnel are often used as advanced forces in amphibious operations, conducting tasks such as special reconnaissance, terminal guidance, clearance, and personnel recovery. These tasks may be clandestine in nature and are conducted with the disadvantage of an offensive position against non-permissive coastal defenders. Amphibious operations often involve distributed forces and present many communication and coordination issues.

5.21 **Specific considerations.**

a. Need to obtain intelligence on hydrography, obstacles, geography of landing site.

b. Medical issues can arise in two distinct environments (hypothermia vs. hyperthermia).

c. SOF team is most vulnerable during transition between sea and land environments.

d. Challenge of concealment and surprise (noise, sensors, visual).

e. Concealed landing sites that may be more difficult to access for MEDEVAC.

f. Casualties clothing/PPE for sea extraction.

5.22 **Mitigation strategies**.

a. Cross-train medical providers (sea and land).

b. Pre-plan medical requirements with intel, surveillance.

c. Plan for equipment/clothing changes in the mission timeline.

d. Equipment selection: Compromise some aspects and try to have equipment that operates in both environments rather than have environment-specific equipment.

e. During transition point of mission, position escorted MEDEVAC in close proximity.

f. Determine point of no return to sea for casualties.

g. Prepare for delayed exfiltration for SR mission (PCC).

h. Prepare to remain at sea for prolonged period.

5.23 **Subsurface operations.** In littoral and riverine waters, there is potential exposure to toxic chemicals, bacteria, natural and artificial hazards which may have medical implications. Visibility is often decreased, which may increase risk to mission success and individual health. It may be important to provide pre-exposure and post-exposure prophylaxis and prepare for these eventualities.

Section 6 – Land to sea operations

5.24 This type of mission typically involves transitioning from land to sea to engage a target. This target may be in close proximity to shore, ranging from a ship in port to an oil rig off the coast. The SOP in these situations is to extract casualties to a shore-based medical facility or casualty collection point (CCP). Conventional medical assets are a reasonable option if available.

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Chapter 6 – Prolonged Casualty Care

Section 1 – General

6.1 PCC is applied beyond doctrinal planning times by a SOF provider to decrease casualty mortality and morbidity. It uses limited resources and is sustained until the casualty arrives at an appropriate higher level of care. The Joint Trauma System (JTS) guideline defines PCC as “The need to provide patient care for extended periods of time when evacuation or mission requirements surpass available capabilities and/or capacity to provide that care”.

6.2 Operational and medical planning should seek to avoid categorizing PCC as a primary medical support capability or control factor during deliberate risk assessment; however, an effective medical plan always includes PCC as a contingency. Ideally, forward surgical and critical care should be provided as close to casualties as possible to optimize survivability.

6.3 NATO units must be prepared for medical capacity to be overwhelmed, or for medical evacuation to be delayed or compromised. When contingencies arise, commanders’ casualty response plans during PCC situations are likely to be complex and challenging. Therefore, PCC planning, training, equipping, and sustainment strategies must be completed prior to a PCC event. The following evidence-driven PCC guidelines are designed to establish a systematic framework to synchronize critical medical decisions points into an executable PCC strategy, regardless of the nature of injury or illness, to effectively manage a complex patient and to advise commanders of associated risks.

6.4 The guidelines build upon the accepted TCCC categories framed in the massive haemorrhage/MASCAL, airway, respirations, circulation, communications, hypo/hyperthermia and head injuries, pain control, antibiotics, wounds (including nursing and burns), splinting, logistics (MARC2H3-PAWS-L) treatment algorithm.

6.5 The PCC guidelines prepare the service member for “what to consider next” after all TCCC interventions have been effectively performed and should only be trained after having mastered the principles and techniques of TCCC. The guidelines are a consolidated list of casualty-centric knowledge, skills, abilities, and best practices are the proposed standard of care for developing and sustaining Department of Defense (DoD) programmes required to enhance confidence, interoperability, and common trust among all PCC-adept personnel across the joint force.

Section 2 – PCC principles

6.6 The principles and strategies of providing effective PCC are meant to help organize the overwhelming amount of critical information into a clear clinical picture and proactive plan regardless of the nature of injury or illness. The following steps can be implemented in any austere environment from dispersed small team operations in permissive environments to large scale combat operations to make the care of a critically ill patient more efficient for the medic and their team. These mimic the systems and processes in typical intensive care units without relying on technology, while leaving the ability to add technological adjuncts as they become available.

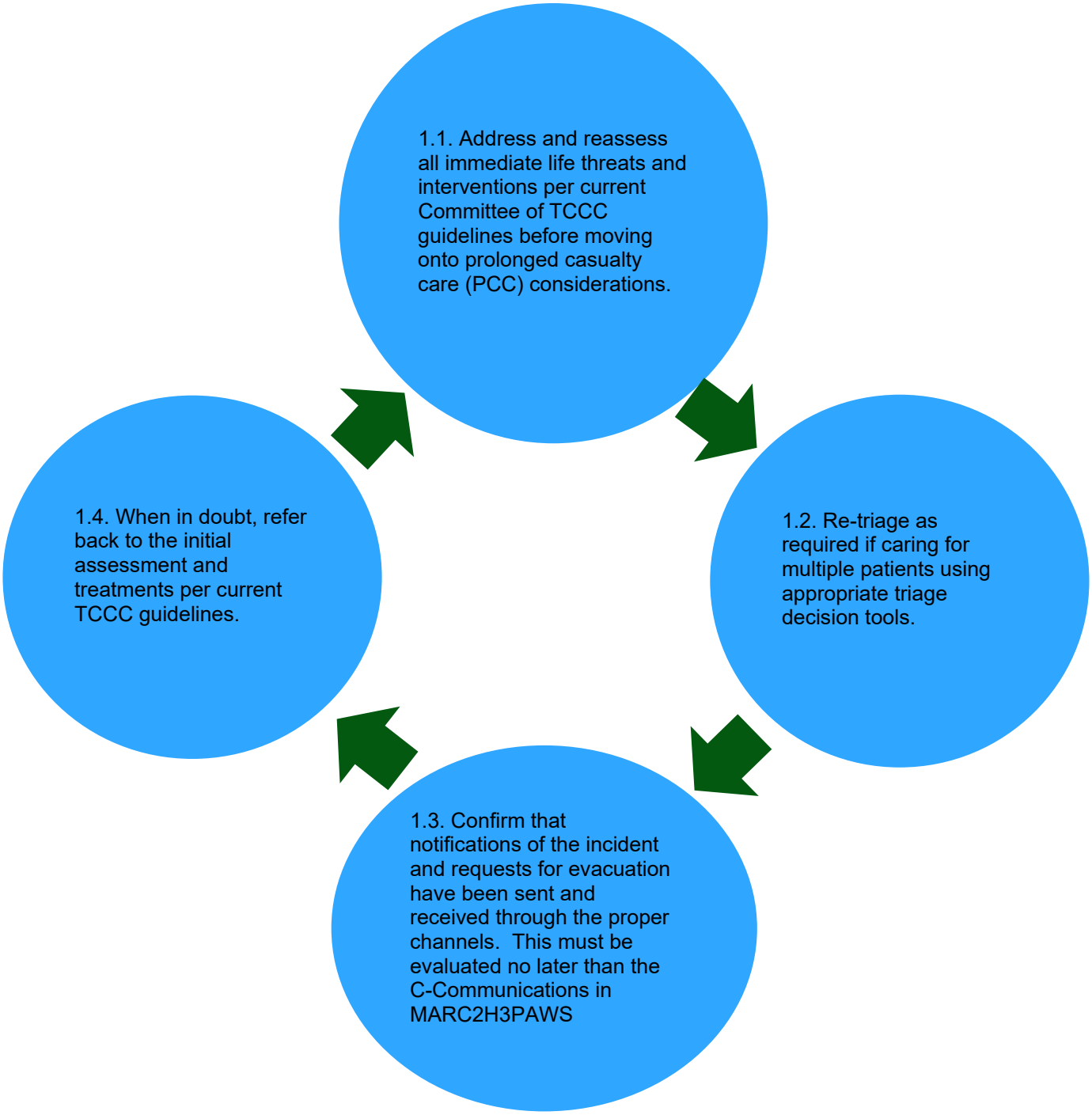
1.1. Address and reassess all immediate life threats and interventions per current Committee of TCCC guidelines before moving onto prolonged casualty care (PCC) considerations.
1.2. Re-triage as required if caring for multiple patients using appropriate triage decision tools.
1.3. Confirm that notifications of the incident and requests for evacuation have been sent and received through the proper channels. This must be evaluated no later than the C-Communications in MARC2H3PAWS
1.4. When in doubt, refer back to the initial assessment and treatments per current TCCC guidelines.

Figure 6.1 – Steps of PCC Principles

6.7 The following checklist is meant to emphasize some of the most important principles in efficient care of the critically ill patient.

a. Perform initial lifesaving care using TCCC guidelines and continue resuscitation. The foundation of good PCC is mastery of TCCC and a strong foundation in clinical medicine.

b. Delineate roles and responsibilities, including naming a team leader. A leader should be appointed who will manage the larger clinical picture while assistants focus on attention intensive tasks.

c. Perform a comprehensive physical exam and detailed history with problem list and care plan. After initial care and stabilization of a trauma or medical patient, a detailed physical exam and history should be performed for the purpose of completing a comprehensive problem list and corresponding care plan.

d. Record and trend vital signs. Vital signs trending should be done with the earliest set of vital signs taken and continued at regular intervals so that the baseline values can be compared to present reality on a dedicated trending chart.

e. Perform a teleconsultation. As soon as is feasible, the medic should prepare a teleconsultation by either filling out a preformatted script or by writing down their concerns along with the latest patient information.

f. Create a nursing care plan. Nursing care and environmental considerations should be addressed early to limit any provider-induced iatrogenic injury.

g. Implement team wake, rest, chow plan. The medic and each of their first responders should make all efforts to take care of each other by insisting on short breaks for rest, food, and mental decompression.

h. Anticipate resupply and electrical issues.

i. Perform periodic mini-rounds assessments. Stepping back from the immediate care of the patient periodically and re-engaging with a mini patient round and review of systems can allow the medic to recognize changes in the condition of the patient and reprioritize interventions.

(1) Is the patient stable or unstable?

(2) Is the patient sick or not sick?

(3) Is the patient getting better or getting worse?

(4) How is this assessment different from the last assessment?

j. Obtain and interpret lab studies. When available, labs may be used to augment these trends and physical exam findings to confirm or rule out probable diagnoses.

k. Perform necessary surgical procedures. The decision to perform invasive and surgical interventions should consider both risks and benefit to the patient's overall outcome and not merely the immediate goal.

l. Prepare for transportation or evacuation care. If the medic is caring for the patient over a long tactical move or strategic evacuation, they should be prepared with ample drugs, fluids, supplies and be ready for all contingencies in flight.

m. Prepare documentation for patient handover. The preparation for transportation and evacuation care should begin immediately upon assuming care for the patient and should include hasty and detailed evacuation requests up both the medical and operational channels with the goal of getting the patient to the proper role of care as soon as possible.

Section 3 – PCC competencies

6.8 PCC operational context uses the following paradigm for phases of care for different periods of time one is in a PCC scenario.

Table 6.1 – Roles of Care

Role	Definition	Time period
1a	Carried/point of need/ruck	<1 Hour
1b	Mission-specific transportation platform/truck	1-4 Hours
1c	Mission support site/house	>4 Hours
1d	Evacuation platform/plane (as planned or available)	No timeframe

6.9 Where appropriate, a minimum-better-best format is included for situations in which the operational reality precludes optimal care for a given scenario:

a. **Minimum.** This is the minimum level of care that should be delivered for a specified level of capability

b. **Better.** When available or practical, this includes treatment strategies or adjuncts that improve outcomes while still not considered the standard of care.

c. **Best.** This is the optimal medical for a given scenario based on the level of medical expertise of the provider.

6.10 Expectations of prehospital care, based on TCCC's role-based standard of care, are included within each section.

a. Tier 1: This is the basic medical knowledge for all service-members.

b. Tier 2: Those who have been through approved combat lifesaver (CLS) training are expected to be able to meet the standards at this level of care.

c. Tier 3 Combat medics/corpsmen (CMC): Those who are trained medics/corpsmen are expected to meet the medical standards for this tier.

d. Tier 4 Combat paramedic/provider (CPP): This is the highest level of prehospital capability and will have a significantly expanded scope of practice.

6.11 Training should be composed of primary surveys with lifesaving interventions. This continues with secondary surveys of both medical emergencies and trauma situations with definitive treatment and reassessment of interventions and the continuation of care including evacuation. Curriculum should include patient simulators, role models, or patient models, practical application of skills, therapeutic discussions, and case studies for the anticipated SOF environment.

6.12 Better and best CFC requirements should be fulfilled as a special skill set achieved at the unit level based on mission requirements. This could include advanced procedures, multiple patient/ MASCAL scenarios, and a variety of patient presentations including environmental injuries.

6.13 Exposure to frequent PCC training scenarios is essential to maintain critical skills and adequate patient care. This can either be a separate course or incorporated into regular sustainment training. PCC training scenarios should also be integrated into unit/team trainings as part of casualty response training.

Section 4 – Critical skills

6.14 The below skills are critical to perform up-to-date prolonged critical care. They have been derived from AMedP 8.12 and AMedP 24. They were also added to the NSOCM Critical Skills Task List in support of PCC requirements by decision of the SOF Medical Expert Panel.

6.15 **Critical care skills.**

a. Understand DCR.

b. Conduct haemostasis and surgical recognition.

c. Perform secondary survey.

d. Perform airway ventilation oxygen management.

e. Administer blood or blood products.

f. Conduct minor surgical interventions.

g. Perform wound management.

h. Provide sedation.

i. Perform telemedicine and briefing.

j. Achieve team/close loop communication.

k. Recognize the need for escharotomy.

l. Recognize the need for fasciotomy.

6.16 **Nursing skills.**

a. Record prolonged field care (PFC)-specific documentation.

b. Provide nutrition and hydration.

c. Intake and output.

d. Apply arterial blood therapy.

e. Interpret lab results.

f. Provide pre-op care.

g. Provide post-op care.

h. Provide health and hygiene.

Chapter 7 – NATO SOF Special Operations Surgical Team Capability Requirements

Section 1 – General

7.1 This chapter provides recommended considerations for designing and employment of SOSTs. The majority of the chapter is centred on the United States of America (USA) model of a SOST which, since 2009, has been employing this unique SOF medical asset worldwide.

7.2 The SOST is designed to perform damage control and emergency medicine interventions required to save life, limb, and eyesight and stabilize critically injured patients for transport. A stabilized patient is defined as airway protected, haemorrhage controlled, shock treated, and fractures stabilized. The team is skilled in multi-system trauma, blunt and penetrating trauma, shock and haemorrhage control, respiratory and airway management, limited management of thermal injuries, limb revascularization, stabilization of fractures, and major wound debridement. Surgical techniques focus on haemorrhage control and minimal fluid administration until bleeding is controlled. Weight restrictions limit the amount of crystalloid and blood products available for fluid resuscitations.

Section 2 – Role

7.3 The SOST provides Role 2 surgical care to the SOCC and will normally be attached at the SOTG or even the SOTU level during SOF operations. The SOST has the expeditionary capability to perform quick-reaction, advanced trauma life support, static or mobile damage-control surgery, peri-operative resuscitation and critical care transport aboard opportune air, land, or sea platforms, to include surgery in-flight.

Section 3 – Capabilities

7.4 As a basic rule, the SOST should be is designed to support two damage-control surgeries, four damage-control resuscitations with sustainment increment capability for 30 additional patients. The teams' design may also be tailored to meet mission requirements. The team is also capable of providing surgical and critical care transport support for special operations missions in far-forward permissive, semi- and non-permissive threat environments, to include austere settings. Most SOSTs will maintain an alert posture in order to respond to global contingencies. In some cases, the team will be capable of conducting global health engagement operations through training, advising, and assisting in the development and employment of partner nation surgical and advanced resuscitation capability. The SOST should be able to deploy with tailorable, mission-modular, man-portable packs and, in some cases, with authorized weapons and sensitive items to support the full spectrum of SOF missions.

7.5 **Blood Supplies.** SOST has limited type-specific emergency whole blood collection and transfusion capability. When possible, SOST maintains a supply of 10 packed red blood cells (pBRCs) and 10 fresh frozen plasmas (FFPs) at the forward operating base (FOB).

7.6 **Laboratory.** SOST has no formal laboratory capability. Lab testing is limited to iSTAT.

7.7 **Medications.** Supplies are limited to essential emergency medical care and resuscitative surgery pharmaceuticals.

7.8 **Radiology.** Radiographic imaging is limited to handheld sonography testing.

Section 4 – Personnel

7.9 There is no ideal size for a SOST, although in most cases the team should remain light and agile, with the actual make-up of the team varying depending on the mission. The number and set-up of personnel that make up the SOST will determine their actual capabilities. However, to conduct non-compressible torso haemorrhage surgery, it is recommended that the team should never go below four personnel. Team members can include general surgeons, additional surgeons (orthopaedic, vascular, etc.), anaesthesia providers, emergency medicine physicians, OR technicians, perioperative nurses, or critical care nurses. Teams can be augmented with integral medics or attached SOF medics from the supported force.

7.10 Recommended SOST manning can include the following medical personnel.

a. 1 × general surgeon.

b. 1 × Anaesthesia provider (anaesthesiologist or certified registered nurse anaesthetist).

c. 1 × surgical technologist.

d. 1 × emergency physician.

e. 1 × critical care nurse.

f. 1 × respiratory care practitioner.

7.11 The team can also be divided into two elements.

a. DCS consisting of the general surgeon, anaesthesia provider, and surgical technologist.

b. DCR/casualty evacuation (CASEVAC) consisting of the emergency physician, critical care nurse, and respiratory care practitioner.

Section 5 – Equipment packages

7.12 The team equipment needs to be as compact as possible with the greatest amount of equipment taking up the least weight and cubic space. A key characteristic of SOST equipment is modularity, which allows for mission success in either remote and clandestine environments or a prolonged mature theatre. The need for surgical resupply and potential additional or atypical equipment for permissive medical partnering missions needs to be identified, planned for, and built during SOST medical mission planning.

7.13 At a minimum, a SOST should be capable of performing one complete case from DCR through to surgical intervention and post-operative care. Additional equipment and consumables will increase the capability of the team but must be balanced against the need to remain light and mobile. SOSTs generally do not include sterilization capabilities due to size and weight constraints and are therefore dependent on resupply.

Section 6 – Surgical supply packages

7.14 Resupply or supplementation modules should be identified during pre-mission planning, and pre-packed and well labelled for easy shipment. These packages need to be transportable by a variety of air or ground modes.

Section 7 – Support requirements

7.15 SOSTs are either self-supporting with integral shelter, power generation, communications, water, and rations or they may be entirely dependent on the supported force for these requirements. The supported force should be prepared to provide security and base operational support as required.

Table 7.1 – Variables to Consider When Planning Logistical Support

Team Composition	• Number/type of medical personnel assigned to the team • Team member specialties/experiences/capabilities/preferences
Patient Variables	• Types of patients (friendly combatants/enemy/civilian/paediatric/geriatric/military working dogs)
Mission	• Operational command intent • Security situation (i.e. expected tactical risk to medical personnel) • Length of mission • Number of expected casualties, number of troops at risk • Communication capabilities of medics and next levels of care • Space available for equipment • Max/min equipment weight requirements • Security element for the medical team • Task force composition (joint, combined) and service, state, or national caveats • Team sustainment requirements
Evacuation	• Capability, time, distance from forward medics • Capability of the evacuation platform (CASEVAC vs. MEDEVAC vs. critical care air transport team (CCATT)) • Capability, time, distance to the next level of care

Environmental	• AO-specific medical concerns • Night vs. day operations • Cold vs. hot environments • Indoors vs. outdoors • Physical and human terrain • Security environment
Re-Supply	• Emergent and routine time and processes for resupply of blood products and Class VIII

Note: See the Austere Resuscitative Surgical Care Link in the reference list and reference Appendix A of that document for equipment considerations.

Section 8 – Critical care evacuation and transport

7.16 Casualties requiring immediate surgical treatment by a SOST are critical by nature and thus may need intensive en route care from the point of injury (PoI) to the SOST operating suite and during evacuation to higher echelons of care. Based on mission requirements, a SOST may be additionally tasked with contributing personnel to assist with the critical care evacuation and transport of critical cases.

Section 2 – Command and control

7.17 Administrative control (ADCON) is the direction or exercise of authority over subordinate or other organizations with respect to administration and support. And should be designated to the organization responsible for organizing, training and equipping SOST.

7.18 Operational control (OPCON) is the authority to perform functions of command over subordinate forces involving organizing and employing commands and forces, assigning tasks, designating objectives, and giving authoritative direction necessary to accomplish the mission. OPCON should be designated at the theatre-level echelon such as a SOTG. This allows a SOST to support operations for multiple manoeuvre elements within the theatre. SOST should be prioritized to the most at-risk mission.

7.19 Tactical control (TACON) is the authority over forces that is limited to the detailed direction and control of movements or manoeuvres within the operational area necessary to accomplish missions or tasks assigned. TACON should be designated at the ground force commander level such as a SOTU. This allows SOST to move as far forward as possible to support the immediate on-going mission. TACON can be changed from one SOTU to another at the direction of the SOTG throughout an operational period, but whenever possible should be designated to the SOTU for specific timeframes to allow for maximized planning and integration.

Section 10 – Training

7.20 SOST personnel possess unique skill sets and capabilities. The most successful SOSTs will have robust training centred in damage control resuscitation, damage control surgery, critical care casualty evacuation, post-surgical management, and prolonged field care, in austere and high-threat environments.

7.21 It is highly encouraged that SOSTs train with the special operations units they will support. This will ease their integration into the medical mission planning and determine pre-deployment training requirements. Integration into SOF exercises will also allow SOST and ground force commanders to better understand each other's capabilities, limitations, and requirements.

7.22 SOST personnel should also be trained to ensure tactical proficiency deemed necessary by ongoing deployment requirements. SOSTs should be prepared to function outside of the boundaries of forward operating bases, therefore, success relies on proper integration with the operational mission. The ability to balance resuscitative trauma care within the tactical mission requirements and constraints is the greatest challenge. Teams should undergo training to function in tactical environments, including training in survival, evasion, resistance, and escape, and be proficient in tactical communications and weapons management. Specific guidance from the supported ground force should guide the training requirements. Pre-mission tactical training for the team should be supported by hospital and ground force leaders and include technical skills and knowledge, team training, and professional development.

Table 7.2 – Recommended Qualification Training

TASK	Team Member(s)	Frequency	Requirement
Initial Skills Training Course(1)	All	One-Time	National Requirement
CASEVAC Course (2, 3)	All	One-Time	National Requirement
Intro to Special Operations	All	One-Time	National Requirement
Intro to Spec. Ops Medicine	All	One-Time	National Requirement
Level B Survival, Evasion, Resistance, and Escape (SERE) Course	All	One-Time	National Requirement
Underwater Egress	All	One-Time	National Requirement
Emer Parachute Training	All	One-Time	National Requirement

Table 7.3 – Recommended Mission Ready Requirements

TASK	Team Member(s)	Frequency	Requirement
Physical Exam	All	1/365	National Requirement
Advanced cardiac life support (ACLS)	All	1/2yr	National Requirement
Advanced trauma life support (ATLS)	All	1/4yr	National Requirement
Basic life support (BLS)	All	1/2yr	National Requirement
Paediatric advanced life support (PALS)	All	1/2yr	National Requirement
TCCC	All	1/3yr	National Requirement
Licensure verification	All	Per state	National Requirement
Command Readiness Program	All	Per state	National Requirement
CCATT Initial	All	One-time	National Requirement
CCATT Advanced	All	One-time	National Requirement
Primary Weapons Proficiency	All	1/365	National Requirement
Unit Mission Brief	All	One-time	National Requirement
Conduct After Capture (SERE Refresher)	All	1/3yr	National Requirement

Section 11 – Tactics, techniques, and procedures

7.23 It is essential that each SOST develop its own mission essential task lists that address the entire spectrum of the mission from pre-deployment, deployment, execution, and post deployment.

Table 7.4 – Recommended Tactical Training Requirements

Task	Team Member(s)	Frequency	Requirement
SUT			
Tactical dismounted ops	All	1/365	National Requirement
Tactical mounted ops	All	1/365	National Requirement
Battle gear fundamentals	All	One-Time	National Requirement

Task	Team Member(s)	Frequency	Requirement
Mission Prep			
Mission planning	All	1/365	National Requirement
Full mission profile (FMP)	All	1/365	National Requirement
Extreme environment training	All	1/365	National Requirement
Communications			
Line of sight (LOS)	All	1/180	National Requirement
Satellite communications (SATCOM)	All	1/365	National Requirement
Data messaging	All	1/180	National Requirement
High performance waveform (HPW)	All	1/365	National Requirement
High frequency	All	1/365	National Requirement
9-Line casualty	All	1/365	National Requirement
Size, activity, location, unit, time, and equipment (SALUTE) report	All	1/365	National Requirement
Radio proficiency	All	1/365	National Requirement
Vehicle			
Tactical vehicle training	All	One-Time	National Requirement

Table 7.5 – Flight Training Requirements

Task	Team Member(s)	IQ	MR	Frequency	Requirement
Aircraft familiarization (fixed wing)	All	X	X	1/365	National Requirement
Aircraft familiarization (rotary/tilt rotor)	All	X	X	1/365	National Requirement
Aircraft familiarization (non-standard aerial vehicle)	All	X	X	1/365	National Requirement
In-flight patient movement considerations	All	X	X	1/365	National Requirement

Table 7.6 – Recommended Clinical Training Requirements

Task	Team Member(s)	Freq	Requirement
Medical equipment review	All	1/365	National Requirement
Patient evacuation (airlift)	All	1/365	National Requirement
Patient evacuation (ground)	All	1/365	National Requirement
MASCAL triage	All	1/365	National Requirement
Whole blood transfusion	All	1/365	National Requirement
CCP set-up	All	1/365	National Requirement
Walking blood bank	All	1/365	National Requirement
M – Mechanism of injury, I – Type of Injury, S – Signs, and T – Treatment (MIST)/TCCC Documentation	All	1/365	National Requirement
JTS reporting	All	1/365	National Requirement
Trauma mgmt.	All	1/365	National Requirement
Non-compressible torso haemorrhage	All	1/365	National Requirement
Advanced airway management	All	1/365	National Requirement
Thoracic trauma	All	1/365	National Requirement
Abdominal trauma	All	1/365	National Requirement
Acute extremity compartment syndrome	All	1/365	National Requirement
Trauma anaesthesia	All	1/365	National Requirement

Task	Team Member(s)	Freq	Requirement
DCR	All	1/365	National Requirement
Resuscitative endovascular balloon occlusion of the aorta (REBOA)	All	1/365	National Requirement
Hypothermia prevention	All	1/365	National Requirement
Infection prevention	All	1/365	National Requirement
Clinical practice guidelines Review (all not incl. above)	All	1/365	National Requirement
Clinical currency requirements	All	1/90	National Requirement

Table 7.7 – Expeditionary Medicine Task Definitions for SOST

Clinical			
Task	**Task**	**Condition**	**Standard**
Medical Equipment Review	Demonstrate proficiency on SOST patient movement request (PMR) equipment. Demonstrate proficiency in use of talon litter, SKEDCO, DOAKs, stanchions, and Rous Bag (Initial and Currency).	Classroom or field setting with qualified SOST instructor.	Perform all objectives per PMR Proficiency checklist. Demonstrate hands on knowledge of litter, SKEDCO, DOAKs, stanchions, and Rous Bag.

Patient Evacuation (Airlift)	Attend formal CASEVAC/CCATT school house (Initial skills); Currency - review, conduct safe patient evacuation. Will attend seats out waiver brief.	Graduate formal training school (CASEVAC/CCATT). Currency -Fuselage Trainer, FMP, or exercise with qualified SOST instructor.	In accordance with passing criteria at CASEVAC/CCATT school (Initial skills); Currency - members will demonstrate safe and effective patient evacuation skills on airframes, to include enplaning, deplaning, litter tie down/security, demonstrate ability to perform patient care en route, safe litter movements. Will verbalize seats out waiver process, documents.
Patient Evacuation (Ground)	Demonstrate proficiency in safe patient evacuation skills via ground movement platforms (truck, ambulance, ambus, vehicle of opportunity) (Initial and Currency).	Field setting with qualified SOST instructor and vehicle instructor.	Safely perform patient evacuation via ground movement platforms (patient adequately secured, safe litter movement, demonstrate ability to care for patient enroute).
MASCAL Triage	Review MASCAL/triage procedures, roles/responsibilities, resources downrange, and criteria for evac (Initial and Currency).	Classroom setting (Initial skills); Currency – Conducted during FMP/exercise/ content review with qualified SOST instructor.	Verbalize components of dynamic triage, triage categories, in a variety of settings with limited resources, verbalize or conduct MASCAL operations during FMP/exercise.
Walking Blood Bank	PowerPoint briefing w/ hands on IV placement, blood typing with Eldon cards, and buddy transfusion kit familiarization.	Classroom setting.	Initial: Demonstrate how to place IV, draw blood sample, and complete Eldon card.

CCP Set-up (Air)	Demonstrate set-up of triage, surgical suite, and patient care area on board aircraft. (Initial and Currency).	Light/no light or live aircraft (Initial and Currency).	Set up patient care area light/no light on board aircraft, demonstrate effective configuration and safe techniques aboard aircraft using surgical table and/or stanchions. Currency: Verbalize appropriate configuration and safe techniques aboard aircraft.
CCP Set-up (Ground)	Perform SOST tent set-up with casualty collection point, review process to receive patients from air and ground forces.	Classroom setting and outdoor day/night setting. Review tent pole identification system for night/night vision goggles.	Demonstrate setting up tent in light/no light conditions in less than 10 minutes.
Blood Management	Review protocol for administering blood in austere conditions to include equipment required for storage and transportation. Criteria for blood administration.	Classroom (PowerPoint) or field setting with qualified SOST instructor (Initial and Currency).	Demonstrate and verbalize appropriate criteria and protocol for administering blood to include equipment required for storage/transportation (blood warmers, blood fridge, coolers), process for requesting blood downrange (Initial and currency).
MIST/TCCC Documentation	Review MIST reporting, TCCC documentation (or approved JTS documentation), complete all patient care documentation in accordance with current JTS policy.	Classroom (PowerPoint) or field setting with qualified SOST instructor (Initial and Currency).	Demonstrate required documentation using TCCC cards (or per theatre) and effective communication during patient hand-off.
JTS Reporting	Review current JTS Reporting requirements.	Classroom (PowerPoint) or field setting with qualified SOST instructor (Initial and Currency).	Demonstrate appropriate JTS reporting. Currency: verbalize appropriate JTS reporting.

Trauma Management	Attend formal CASEVAC/CCATT or Emergency War Surgery course (Initial). Perform appropriate trauma management skills (Currency).	Field setting (FMP, exercise, integration event) with qualified SOST instructor (Currency).	Demonstrate effective trauma management skills in a field/operational setting. Currency: participate in trauma management scenario, hands-on or theoretical.
NCTH	Attend REBOA clinical in-service or BEST course.	Classroom (Initial). Field (Currency) (FMP, ex, etc.) w/ qualified SOST instructors.	Demonstrate proficiency in REBOA placement and management of catheter device.
Advanced Airway Management	Attend formal CASEVAC, CCATT or EWS course (Initial). Perform advanced airway management skills (Currency.)	Classroom (Initial). Field setting (Currency) (FMP, ex, integration event) w/qualified SOST instructors.	Demonstrate effective/appropriate advanced airway management to include assisted ventilation, proficiency in placing adjuncts.
Thoracic Trauma	Attend formal CASEVAC/CCATT or Emergency War Surgery course (Initial). Perform appropriate thoracic trauma management skills (Currency).	Classroom setting (PowerPoint) (Initial). Field setting (Currency) (FMP, exercise, integration event) with qualified SOST instructors.	Demonstrate effective/appropriate thoracic trauma management to include criteria for needle decompression, chest tube, surgical intervention, thoracotomy.
Abdominal Trauma	Attend formal CASEVAC/CCATT or Emergency War Surgery course (Initial). Perform appropriate trauma management skills (Currency).	Classroom setting (PowerPoint) (Initial). Field setting (Currency) (FMP, exercise, integration event) with qualified SOST instructors.	Demonstrate effective/appropriate abdominal trauma management to include Focused Assessment with Sonography in Trauma (FAST) exam, criteria for surgical intervention.

Acute Extremity Compartment Syndrome	Attend formal CASEVAC/CCATT or Emergency War Surgery course (Initial). Perform appropriate acute extremity compartment syndrome management skills (Currency).	Classroom setting (PowerPoint) (Initial). Field setting (Currency) (FMP, exercise, integration event) with qualified SOST instructors.	Demonstrate effective/appropriate acute extremity compartment syndrome to include signs/symptoms, fasciotomy.
Trauma Anaesthesia	Attend formal CASEVAC/CCATT or Emergency War Surgery course (Initial). Perform appropriate trauma anaesthesia management skills (Currency.)	Classroom setting (power point) (Initial). Field setting (Currency) (FMP, exercise, integration event) with qualified SOST instructors.	Demonstrate effective/appropriate trauma anaesthesia to include medications and transfusions.
DCR	Review and perform damage control resuscitation in austere conditions.	Field setting with qualified SOST instructor.	Demonstrate appropriate DCR protocols/procedures to include team roles/responsibilities.
Emergent Resuscitative Thoracotomy	Attend formal CASEVAC, CCATT or EWS course (Initial). Perform emergent resuscitative thoracotomy skills (Currency).	Classroom (Initial). Field setting (Currency) (FMP, exercise, integration event) with qualified SOST instructors.	Demonstrate effective/appropriate thoracotomy skills.
REBOA	Attend BEST (initial). Demonstrate appropriate use of REBOA (Currency).	Classroom setting (PowerPoint) with REBOA trainer (Initial). Field setting (Currency) (FMP, exercise, integration event) with qualified SOST instructors.	Demonstrate proficiency in REBOA placement and management of catheter device.

Hypothermia Prevention	Attend formal CASEVAC, CCATT, or EWS course (Initial). Perform appropriate hypothermia management skills to include equipment (Currency).	Classroom setting (PowerPoint) (Initial). Field setting (Currency) (FMP, exercise, integration event) with qualified SOST instructors.	Demonstrate effective hypothermia management to include utilization of equipment related to hypothermia management (HPMK, buddy light, QinFlow Warrior).
Infection Prevention	Review methods for infection prevention in austere conditions.	Classroom setting (PowerPoint) (Initial). Field setting (Currency) (FMP, exercise, integration event) with qualified SOST instructors.	Verbalize appropriate measures for infection prevention to include first-line antibiotic therapy (as required and available). Additionally verbalize understanding of infection control prevention measures for SOST members during medical operations.
Annual Clinical Practice Guideline (CPG) Review	Review all CPGs as applicable for mission capability (MISCAP).	Review all CPGs as applicable for MISCAP.	Review all CPGs as applicable for MISCAP.

Chapter 8 – Medical Support to NATO SOF Chemical, Biological, Radiological and Nuclear Operations

Section 1 – Introduction

8.1 This chapter details medical issues to be considered when engaging in NATO SOF operations in which CBRN materials and environments may be encountered. This chapter should be used when planning for CBRN missions or when establishing a CBRN medical capability within a SOF unit. It should not be used as a replacement to AMedp-7.1, rather as a tool for use in conjunction.

8.2 SOF are a significant part of Allied capabilities to support NATO's counter proliferation and trafficking objectives related to weapons of mass destruction (WMD) and CBRN related materials, including the ability to conduct, with other specialised elements, WMD disablement missions. WMD disablement is generally described as operations whose aim is to systematically locate, secure, characterise, eliminate, or dispose WMD, CBRN weapons, CBRN devices and CBRN materials, and/or a potential adversary's capability to research, develop, test, produce, stockpile, deploy, or employ such weapons, devices, and materials.

8.3 Activities designed to conduct WMD disablement missions are inherently complex and generally necessitate the employment of specially trained and equipped personnel. In the context of a NATO operation, NATO SOF involvement in the WMD disablement missions will generally be deferred to the members of the Alliance possessing these specialized capabilities. In extremis, however, where specialized forces cannot be brought in sufficient time to prevent the employment of WMD and/or CBRN materials or their immediate interdiction is required, the authority might be sought to use other NATO forces—to include NATO SOF—to capture, deter, secure, or assist in a WMD disablement mission.

Section 2 – Mission challenges of SOF CBRN missions

8.4 The challenges of CBRN missions vary greatly depending on the specific objectives of those missions and what agent you are dealing with, but just operating in these environments can be challenging. Some characteristics which dictate the complexities can be:

a. Domestic vs. foreign.

b. Covert/low military signature vs. overt.

c. High grade vs. home-made.

d. A known CBRN target vs. unknown threat.

e. Permissive – non permissive.

Section 3 – General considerations

8.5 **Training.** Rehearsals are a vital aspect to any mission preparation, and this is especially true when preparing for CBRN missions. SOF units must train in CBRN equipment for any mission profiles in which there is a threat. It is important to understand your limitations when moving, operating, and treating patients while in CBRN PPE. Other training that will increase operational effectiveness include:

a. Identifying CBRN medical specialists/leads within the unit.

b. Developing CBRN medical SOPs/TTP.

c. Educating the operator – to help understand the threat.

d. Identifying current CBRN courses for both operators and medical personnel to attend.

e. Extra education and training for assault teams.

f. Toxicology training, especially for clinicians.

g. Unit level training.

h. Assessing SOST ability to operate on CBRN casualties.

i. Roles and responsibilities.

8.6 **Hot/warm/cold zone care.** Ensuring that the right care is given at the right phase is an important responsibility for the medic in the CBRN environment. The hot zone should be treated like the care under fire (CUF) phase of normal trauma treatment, where a conscious level, respiration, eyes, skin, secretions (CRESS) assessment is carried out prior to military occupational specialty (MOS) administrative retention review (MAR2) treatment. Early movement from this area to the warm zone is priority. The image below demonstrates the treatment ideally carried out at each phase:

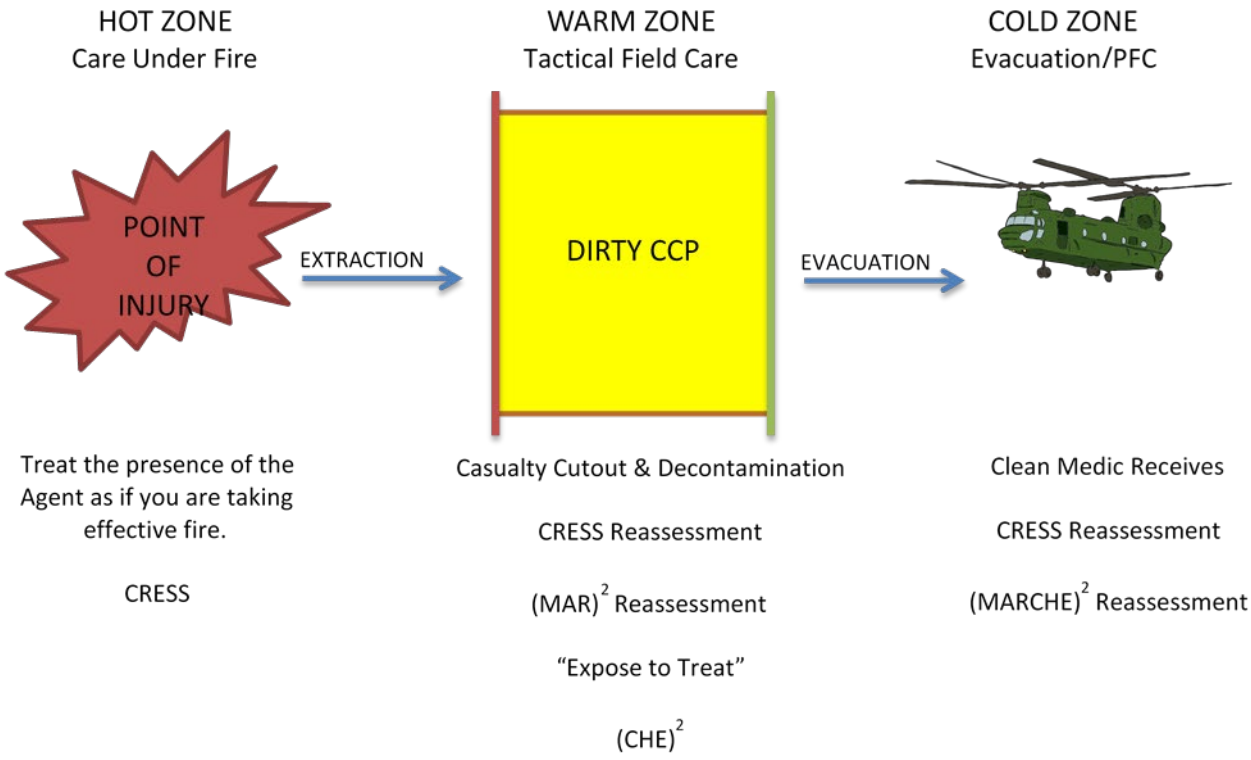

Figure 8.1 – Treatment Phases

8.7 **Treatment priorities.** It is recommended that changes be made to the priorities for treatment when dealing with CBRN casualties. In this case, the augmented ($MARCHE^2$) algorithm should be used, as seen below:

Table 8.1 – $MARCHE^2$ Algorithm

M^2	Massive haemorrhage	Massive blood loss is the most likely rapid killer of casualties even in the CBRN environment.
	Mask	Help casualty don mask or ensure proper seal if protective mask already in place. If a powered air purifying respirator (PAPR) or self-contained breathing apparatus (SCBA) in place, ensure it is functional.
A^2	Airway	Determine if it makes sense to unmask casualty for airway intervention in a contaminated environment. Determine appropriate airway device that will allow casualty to be re-masked if indicated.
	Antidotes	If casualty will die before decontamination (i.e. nerve agent exposure or cyanide), administer antidotes.

R^2	Respirations	Determine if respiratory symptoms are caused by agent or trauma.
	Rapid spot decontamination (RSD)	RSD indicated if agent can be seen on skin or there is a breach in PPE. Apply Reactive Skin Decontamination Lotion (RSDL), M295, sorbent, tech wipe, or plain irrigation. Rapid decontamination of the eyes with water or normal saline is imperative due to eye sensitivity.
C^2	Circulation	Determine if circulation issues are caused by agent or trauma.
	Countermeasures	Nebulized medications, intravenous (IV)/ Intraosseous infusion (IO) drips, chelation therapy, airway maintenance (suctioning, intubation, ventilator settings, etc.)
H^2	Hypothermia	Prevent hypothermia, especially in setting of decontamination.
	Head wounds	Determine if altered mental status is due to agent or trauma.
E^2	Evacuate	Determine evacuation asset. Assess need for further decontamination. Dirty evacuation to a robust doctrinally complete and fully manned decontamination site may be the best choice if it is available, especially for extremely deadly agents such as nerve or biological agent. Fill out the CBRN Casualty Card. Begin prolonged field care and treat “everything else” if required.
	Extraction	Every CBRN casualty will require an extraction to effect rescue. The hot line or dirty CCP may be hundreds of metres or more away from the hot zone. Be cognizant of risk of heat injury to those carrying casualties in PPE. The nature of the CBRN environment almost always presents casualty extraction problems through the phases of care (e.g. confined space, vehicle, high angle, etc.).

8.8 **Human factors.** Operating in a CBRN environment carries with it extra stressors, it is important that this is considered and mitigated as much as possible. Some points to consider include:

a. Operating in confined spaces.

b. Operating in PPE for prolonged periods of time.

c. Heat Injury monitoring and mitigation.

d. Emphasis on psychological factors.

e. Good pre-mission preparation.

f. Nutrition.

8.9 Identify decontamination teams. Decontamination is a vitally important aspect to CBRN missions and although not inherently medical.

a. Will decontamination be done on target, or will you transport contaminated?

b. Who will provide? What is their capacity? Can they do equipment?

c. Identify whether to transport dirty and/or contamination threat to vehicles.

d. Develop medical decontamination protocols (who will do it, what interventions).

8.10 Identify reach-back channels to SMEs. SMEs are an important advisory capability for CBRN missions, enabling the operators to have detailed information to hand during a CBRN SOF mission. The following are points to consider for SMEs.

a. Should be used pre-, during, and post mission, and in training.

b. OPSEC is vital for SOF missions and especially CBRN missions. Secure lines of communication should be established to SMEs who are non-deployable but cleared to understand the mission and give advice.

c. Scientists and/or medical SMEs.

d. May require separate SMEs for C, B, R and N mission profiles.

8.11 Define MROE when combined with civilians. Some medications may be used off-license for certain CBRN treatments, ensure that there is a legal standing for this, especially when dealing with civilians.

8.12 PPE is vital to CBRN missions and full engagement with SMEs is paramount to ensure the correct protection is given.

a. Relevant PPE that matches mission profiles (covert/overt stance).

b. PPE will vary depending on role and position during mission.

c. Medical responders should be fully conversant with all PPE on mission.

8.13 Identify domestic CBRN responders. In the event of a domestic CBRN incident, it is likely that civilian responders will be involved:

a. Who will respond to a domestic CBRN incident?

b. Who is coordinating assets?

c. What are their capabilities and capacities?

d. OPSEC.

e. Civil and military.

8.14 Where/what is your medical destination? When planning on CBRN missions, you must understand what capabilities the higher echelons of care have with regards to the different mission types.

a. Where is the final destination of your patient?

b. How will you get your patients to the medical facility? What are your transport considerations?

c. What is their capacity/capability?

d. Level of isolation?

e. Any specialists?

f. Ability to accept a CBRN casualty?

g. Will they take a dirty casualty? Do they have a decontamination capability?

h. Level of preparedness for a CBRN event (is it exercised often/at all?)

8.15 Develop (medical) intelligence to shape medical preparedness. Level of protection required based on threat assessment and whether pre-exposure prophylaxis should be taken. Intelligence analysts should have prior experience of CBRN.

8.16 Pre/post mission screening. A lot of agents will not show signs or symptoms immediately or may be sub-clinical, so post-mission screening will be an invaluable tool to determine if exposure has occurred.

Section 5 – Specific considerations for chemical agents

8.17 **Medical countermeasures (MCMs).** Unit SOPs should be developed for who will carry the MCMs and a system put in place for acquiring them. Treatment guidelines should be developed so that everyone knows who gets what treatment and when.

a. Pre/post exposure prophylaxis.

b. Combipens.

c. Antidotes (logistics, e.g. atropine).

d. Pre-prepared treatments.

8.18 **PPE.** The PPE plan will change dependant on mission profile and SMEs should be involved in advising the best solution for each problem. Points to consider when deciding on PPE could include:

a. Different PPE for different zones.

b. Breakthrough times for canisters and clothing.

c. Respirator or SCBA.

d. Nitrile gloves or butyl.

e. Boots.

f. Clothing. What mission profile are you in? Covert/low military signature or overt?

g. Equipment replenishment. What happens when your equipment is dirty and needs to be replaced/decontaminated?

8.19 **Evacuation chain.** The evacuation chain will need to be considered carefully and a PACE plan should be in place for both clean and dirty casualties. This will include how to move long distances to Role 3 facilities and further. What will you do with the following casualty profiles?

a. Trauma/heat casualties (clean).

b. Dirty casualties.

c. Combined.

8.20 **Decontamination.** What type of decontamination agent or technique is required will depend very much on the mission profile and what agent is encountered. Consideration should be made for the following:

a. Dry vs. wet.

b. Decontamination agents.

c. Who will carry out decontamination?

d. Contaminated vs. contaminated casualties. Keep casualty decontamination area separate.

e. Pre-identified locations.

f. Max capacity.

g. How mobile is your line?

h. Wind direction.

i. Hasty vs. deliberate.

j. Handling of friendly vs. enemy vs. non-combatants.

k. Time considerations.

8.21 **Detection/agent identification/monitoring.** Although agent detection is important, there are instances when you may receive false positives and indeed in certain agents there may be false negatives when there is no off-gassing of the agent. Clinical judgement should be the basis for most treatment plans.

Section 6 – Specific considerations for biological

8.22 **MCMs.** Due to the nature of biological agents, it is not generally known if an individual has been exposed at point of wounding, therefore TTPs should be considered for administration and development of the following:

a. Antibiotics (biological agent protection (BAPs)).

b. Antivirals.

c. Antitoxins.

d. Vaccinations.

8.23 **PPE.** The nature of the prospective agent should dictate the level of PPE required for the operators on the ground. Discussions should be made through SMEs to aid with decisions.

a. Respirators vs. facemasks.

8.24 **Evacuation chain.** When preparing for potential biological agent tasks, preparations should be made for evacuating potentially contagious casualties. Other factors include:

a. Permissions will have to be gained to move infectious patients over international borders.

b. Method of transportation.

c. Infectious/contagious vs. contaminated.

d. A destination hospital should be identified prior to the mission launch, capable of handling potentially highly infectious patients, including a level 4 biosafety facility (the highest level of biosafety precautions).

8.25 **Decontamination.** Everyone on target should be decontaminated due to no immediate feedback/detection on exposure. This will ensure greater reduction in cross contamination; however, will be more labour and equipment intensive.

8.26 **Detection/agent identification.** Any detection capability should be explored through SME channels, this should include swabs/samples from the patient and possible contamination for future identification.

8.27 **Exposure SOPs.**

a. Do you immediately isolate a potentially exposed operator?

b. Will you quarantine the team post operation? Where?

c. Unknown vs. known exposure.

d. Incubation period.

Section 7 – Specific considerations for radiological/nuclear

8.28 **MCMs.** Detailed research and consultation should shape your choice of MCM for radiological/nuclear ops. Consider the following:

a. Chelating agents.

b. Stimulating factors.

c. Vitamins.

d. Potassium iodide pre-exposure.

8.29 **PPE.** The basis for protection should be based on the principles of time/distance/shielding, along with respiratory protection.

8.30 **Evacuation chain.**

a. Identify a suitable hospital.

b. Consider link-in to submariners/Navy or other non-military SMEs with respect to nuclear medicine.

8.31 **Decontamination.**

a. Use of detector on decontamination line.

b. Spray down any potential agent.

c. Contamination vs. exposure.

d. Special considerations.

(1) Embedded object.

(2) Internal decontamination (med only).

8.32 **Detection/agent identification/monitoring.**

a. Geiger/rad detector.

b. Personal dosimetry.

8.33 **Exposure SOPs.** SOPs should be well established for treating radiation patients, especially with regards to dose calculations and ensuring the correct treatments are used for the radiation. Other considerations include:

a. Swabs.

b. Decontamination.

c. Timings.

d. Dose calculations.

e. Health physicist reach-back.

f. Post mission illness.

Section 8 – Conclusion

8.34 Medical considerations of SOF missions in CBRN environments are many and varied. Thorough planning is essential to ensure mission success. The above-mentioned points are not considered a finite consolidated list, but a guide on main points that should be considered.

Chapter 9 – SOF Medical Intelligence

Section 1 – General

9.1 Medical intelligence as defined by NATO is an intelligence rather than a medical function and may be operationalized for the benefit of national strategic interests. As a domain, it is relatively small within national intelligence structures, but important for its role in global surveillance systems. It is a sector that engages in activity directly relevant to global health, yet maintains firm priorities aligned with strategic security interests rather than any doctrine of health equity or humanitarian action. Nevertheless, this domain is notable for its scope to enhance the conditions and interests with which global health actors outside national security are interested.

9.2 Intelligence is the NATO Alliance's first line of defence for its three core tasks: collective defence, crisis management, and cooperative security. Quality intelligence is a critical factor for SOF to accomplish their assigned mission sets. Intelligence support to all SOF missions must be responsive and produce authentic and verifiable information that is timely, accurate, detailed, and relevant.

9.3 The rapid and fast paced SOF environment imposes difficulty and complexity, increases the risk levels for operations, and demands specialized skills and expertise. A medical operations staff must be properly manned, trained, and equipped and requires planning for the special challenges posed by the environment and threats.

Section 2 – Medical intelligence and information

9.4 MI2 contribute to health risk estimation, articulation, and management as well as to intelligence preparation of the operational environment. Medical intelligence and information is essential for medical planning as well as for force health protection and encompasses:

a. **Medical information.** Medical information incorporates all information on medical or environmental threats or on health infrastructure that has been gathered through non-intelligence channels and that has not been analysed for intelligence content. Medical information should be shared freely among members of the Alliance and its partners.

b. **Medical intelligence (MEDINT).** Medical intelligence is the product resulting from the directed collection and assessment (processing) of medical, bio-scientific, epidemiological, environmental, and other information related to human or animal health, to identify threats and offer opportunities for exploitation by decision-makers. Medical intelligence is not to be used, to take any advantage of medical vulnerabilities of any party as this would be a serious violation of fundamental ethical and legal conventions and likely have deleterious effects.

Section 3 – Special operations forces intelligence support structure

9.5 The JTF HQ intelligence directorate (J2) is the primary organization that provides intelligence support to joint warfighting at the JTF level. This occurs by fusing the support capabilities of NATO, the JTF, combat support, and combat units into a single source of intelligence for senior, subordinate, and supporting commands. The JTF HQ J2 manages RFI processing and validation and in-theatre intelligence analysis, production, and dissemination. Furthermore, the J2 coordinates support from other intelligence organizations above and below its echelon for the RFIs it is unable to satisfy. COM JTF provides the conduit for intelligence flow to and from the SOCC, theatre, and national supporting agencies. The mechanism to provide that support is a tailored intelligence organization provided by COM JTF. Both the JTF and the SOCC staffs are joint staffs and will have a J designator (J2), whereas an SOTG will have an S designator (S2).

9.6 The SOCC J2 formation, functions, and responsibilities are as follows.

a. **Activation.** Once the SOCC is activated, an all-source centre (ASC) will be formed under the SOCC J2 to provide a robust capability to support COM SOCC's intelligence requirements and the SOCC's critical mission functions. COM SOCC will request personnel augmentation for the SOCC J2 from the other NATO nations.

b. **Functions.** Intelligence processes are managed across all levels of command through J2/S2 staffs. The ASC serves COM SOCC, the SOCC J2, the SOCC staff, and the SOTGs for all intelligence requirements. The SOCC J2 has reporting requirements up the intelligence chain, through the JTF HQ J2, laterally across to other component intelligence structures, and down the chain to the SOTGs. The SOCC has a limited organic collection capability and is dependent on theatre intelligence systems for indications and warning (I&W).

c. **Responsibilities.** SOCC intelligence responsibilities are derived from COM SOCC and nested within the JTF's priority intelligence requirements (PIRs). While the SOCC J2's analytic capability exceeds that of its subordinate SOTGs, the SOCC is dependent on the synergy of all-source analytical support from the JTF J2 and the SOTGs so that it can manage the flow of requirements and information. ASC responsibilities include:

(1) Developing threat assessments.

(2) Determining the adversary situation.

(3) Evaluating the operation's effectiveness.

(4) Providing operational intelligence support to SOCC components and subordinate SOTGs (this includes SOMTGs).

(5) Focusing the intelligence effort downward in support of the forward-deployed SOF components.

(6) Developing target intelligence packages.

(7) Conduct future target development.

(8) Coordinate with the legal advisor (LEGAD) to ensure compliance with intelligence oversight requirements.

(9) Fuse and share all available intelligence to provide timely, accurate information downward to SOTGs.

(10) Provide information collected by SOCC assets to the JTF HQ J2. Any information collected through source operations should be coordinated with the SOCC J2X prior to being disseminated to the JTF.

(11) Make declassified national information or geo-national products available to Allied units when in a multinational environment.

9.7 The SOTG S2 will also need to be formed and task-organized to fulfil specific functions to fit the mission.

a. **Activation.** Once an SOTG is activated for deployment, an SOTG intelligence section will be formed under the S2 to provide the needed capability to support COM SOTG's critical warfighting functions. While personnel augmentation for the SOTG may be assigned by the SOCC, it is the nation's responsibility to staff the SOTG S2 cell according to the requirements of the operation. All the intelligence assets and functions within the SOTG are under the C2 of COM SOTG and managed by the S2.

b. **Functions.** The intelligence section is the primary centre that serves COM SOTG, the S2, the SOTG staff, and the SOTUs for intelligence requirements, enhanced analytic capability, and collection assets. The SOTG intelligence section has reporting ties up the intelligence chain, through the SOCC J2, and to the supported JTF HQ; laterally across to other conventional force intelligence structures; and down the chain to SOTUs. A properly staffed and equipped SOTG intelligence section can process reporting from its subordinate SOMTUs and enhance it with resources and information from the SOCC J2 or internal capability. The SOTG intelligence capabilities are determined by mission, national resources, and the availability of NATO-enabled command and control information system (C2IS) assets. The SOTG S2 must also possess a deep knowledge of SOF operations.

Section 4 – External support to NATO special operations

9.8 Support from the JFC and SOCC are not the only intelligence support mechanisms for the SOTG. There are also national intelligence centres (NICs), the NATO Intelligence Fusion Centre (NIFC), and strategic agencies.

a. **NICs.** The primary role of NICs in a NATO theatre is to support deployed national assets, but they also provide releasable national intelligence and information in support of the NATO mission. SOTG S2 requests that might be answered by NICs are submitted via the SOCC J2 intelligence requirement management and collection management (IRM&CM) section through relevant classified systems and networks. The NICs are requested to respond back to the SOCC J2 (via IRM&CM), and the J2 disseminates the intelligence to the appropriate SOTGs and/or SOTUs, as required. Access to appropriate NATO intelligence systems and software as well as appropriately classified national systems (as agreed through the intelligence architecture) are essential for sharing and coordination.

b. **NATO SOFCOM.** The SOFCOM J2 is linked to Supreme Headquarters Allied Powers Europe (SHAPE) through the Director Special Operations Office, which facilitates direct connectivity of SOF intelligence to the strategic level. Additionally, the SOFCOM J22 Situation Awareness (SA) Branch communicates with the SHAPE Comprehensive Crisis and Operations Management Centre to maintain SA of ongoing and emerging crises.

c. **NATO Intelligence Fusion Centre.** The NIFC provides timely, effective, network-enabled intelligence in support of planning and execution of NATO SOF operations. This includes gathering, processing, and disseminating intelligence products. Additional support is provided in the form of a responsive RFI database available on appropriately classified systems.

d. **Strategic agencies.** Strategic-level agencies may provide additional collection, processing, and dissemination support to NATO SOF. SOTG requests for strategic agency support are coordinated by the SOCC J2 and are submitted through the appropriate intelligence processes.

e. **Other support.** Other support includes maritime component commander (MCC) forces. The SOTG could be in a direct support role of the MCC and embarked on MCC shipping. The navy will have their own intelligence support dedicated to their commander and can be used for support to the SOMTG and SOMTUs.

Section 5 – Special operations intelligence operations relative to the intelligence cycle

9.9 The intelligence cycle is the dynamic process culminating in the distribution of finished intelligence products. The sequence is cyclical in nature since intelligence requires constant reappraisal and updating if it is to remain current and relevant to COM SOTG's needs. The intelligence cycle is not unique to an SOTG or special operations.

a. **Direction.**

(1) During the direction stage, intelligence requirements are determined, collection efforts are planned, requests to collection agencies are issued, and the productivity of such agencies is continually monitored. The direction stage

of the intelligence cycle implements COM SOCC's direction and guidance (D&G) with respect to assigned and attached capabilities. Once COM SOCC has directed his priorities (usually derived from COM JTF guidance) for use of assigned and attached resources, SOTG planners are able to structure the intelligence requirements (IRs) and input to higher HQs' IRM&CM processes.

(2) This stage is where COM SOTG's PIRs will be drafted, in conjunction with the S3, and approved by COM SOTG. These PIRs will be nested in SOCC PIRs that align with the JFC PIRs. This ensures all collection requests are linked to JFC priorities and evaluated properly against other JFC requests.

(3) Before moving on to the collection stage, an SOTG S2 should have approved PIRs that have been organized into specific intelligence requirements (SIRs). Whichever SIRs are not able to be answered by existing intelligence will now be considered for collection requests inside of the collection stage.

b. **Collection.**

(1) Collection is the second stage of the intelligence cycle. It is the process of gathering information, intelligence, and target data from tasked organizations. The collection stage involves the development of the intelligence collection and processing plan (ICPP) and exploitation of assigned, attached, or allocated collection assets and capabilities.

(2) The PIRs and SIRs will be used to populate the ICPP. SIRs will further be broken down into essential elements of information (EEIs) and organized to show what collection capabilities can fulfil these requirements.

c. Processing.

(1) Processing is described as the conversion of information into intelligence through collation, evaluation, analysis, integration, and interpretation. Processing is iterative and may generate further requirements for collection before dissemination of the intelligence.

(a) Collation. Collation involves grouping together items of related information to provide a record of events and facilitate further processing.

(b) Evaluation. Evaluation involves determining source reliability and information credibility.

(c) Analysis. Analysis involves identifying significant facts, comparing them with existing facts, and drawing conclusions from them.

(d) Integration. Integration involves fusing significant facts to build a more complete picture.

(e) Interpretation. Interpretation is assessing what the integrated information means in terms of what is likely to happen in the future.

(2) Processing is a structured series of actions that, although set out sequentially, may also take place concurrently. Processing is where the analysis will take place to confirm or deny assumptions and re-evaluate the assessments or create new ones.

d. **Dissemination.**

(1) Dissemination is the fourth stage of the intelligence cycle and includes timely communication of the intelligence, in an appropriate form, and by any suitable means, to those who need it. Intelligence must clearly connect to intelligence requirements and any limitations to collection or analysis should be clearly communicated. Most intelligence at the operational and tactical levels is time-sensitive and loses its value over time. Tactical intelligence arriving late may be useless. Intelligence must be in a format and language relevant to the needs of the recipient, quality controlled for errors or circular reporting, and disseminated on a common system.

(2) Dissemination can be challenging in the maritime environment, depending on where the end user is located relative to the intelligence support system. Getting the intelligence to the end user can prove challenging if contingency plans are not put into place.

Section 6 – Collection disciplines

9.10 Intelligence collection disciplines are the means or systems used to observe, sense, and record or convey information of conditions, situations, threats, opportunities, and events. Collection disciplines are the tools to attempt to fulfil intelligence requirements. These are the excepted NATO definitions for the disciplines. Capabilities will be different between countries, but the discipline categories do not vary. There are also other categories that may exist in individual countries. The primary medical intelligence collection disciplines are:

a. **Human Intelligence.** Human intelligence (HUMINT) is intelligence derived from information collected by human operators and primarily provided by human sources. It includes the systematic and controlled exploitation, by interaction with or surveillance of human sources, objects, or individuals. It has the unique ability to provide information regarding an actor's intentions, morale, and relationships among individuals and organizations. HUMINT activities involve collection, reporting, and analysis integrated with all-source intelligence to provide decision-makers with timely and accurate information necessary for conducting successful military operations.

b. **Imagery Intelligence.** Imagery intelligence (IMINT) is intelligence derived from imagery acquired by sensors that can be ground-based, seaborne, or carried by air or space platforms. The information conveyed by an image or full motion video can be clear and concise. It will often serve to support or confirm intelligence derived from other sources.

c. **Measurement and Signature Intelligence.** Measurement and signature intelligence (MASINT) is intelligence derived from the scientific and technical analysis of data obtained from sensing instruments or exploitation processes for the purpose of identifying any distinctive features associated with the source, emitter, or sender, to facilitate the latter's measurement and identification. MASINT is derived from the collection and comparison of a wide range of emissions and evidence with a database of known scientific and technical data to identify the equipment or source.

d. **Open-source Intelligence.** Open-source intelligence (OSINT) is intelligence derived from publicly available information as well as other unclassified information that has limited public distribution or access. OSINT is collected from sources such as radio, television, newspapers, state propaganda, journals and technical papers, the Internet, social media, technical manuals and books, and other media. The intelligence community has always used open sources as an element of SA and in the production of intelligence. OSINT is likely to remain a significant source of basic medical intelligence.

Section 7 – SOF medical intelligence products

9.11 **Common intelligence picture (CIP).** SOF medical intelligence products differ only in the environment they are supporting. A maritime environment could include operations in a littoral zone, riverine operations, or offshore in the deep ocean environment. Maritime intelligence helps capture how these zones are being used by our adversaries as well as their commercial or civilian use. Basic intelligence will help develop an understanding of the environment.

9.12 Medical intelligence and information contained in a CIP or a common operating picture (COP) should be timely, easily accessible, comprehensive and reliable, which means specific, accurate, and up to date. When supporting intelligence and operational staffs in the conduct of strategic assessments, medical intelligence and information has to be compliant with ethical standards and recognized laws pertaining to human rights such as the United Nations Principles of Medical Ethics, the Law of Armed Conflict and medical confidentiality.

9.13 Developing a medical CIP or COP of an AOO will include many different layers of data that should be regularly updated and that can then be used to support planning efforts. Some of the multiple data layers that should be considered are:

a. Environmental factors, including topography and climate, socio-economic factors, public health, animal and plant hazards.

b. Health care services and infrastructure, including organizational structure, capabilities of hospitals and treatment facilities, casualty evacuation and emergency health services and capabilities, specialist health support, medical material, blood bank, and clinical laboratory capabilities. This should include information on civilian and military facilities in the AOO, whatever the sources of information (national, international, civilian or military).

c. Epidemiological data, including incidence, distribution, and control of communicable diseases (particularly gastrointestinal and respiratory diseases, vector-borne diseases and sexually transmitted diseases) in the area of interest.

Section 8 – Intelligence sharing within NATO special operations forces

9.14 Intelligence is the NATO Alliance's first line of defence for its three core tasks: collective defence, crisis management, and cooperative security.

a. Intelligence has the capability to draw on the skills of a wide spectrum of experts and specialists in a variety of organizations, across all commands, and at all levels of operations. Mechanisms are required whereby intelligence can be gathered and shared in a timely manner, within NATO and with non-NATO entities, guided by the idea of responsibility to share in accordance with NATO's existing security policy. The source of the information might be protected and the information itself might be sanitized to protect the source to share information with others. NATO information exchange and classification procedures must encourage and enable concerted effort, collaboration, and cooperation wherever possible. The general need-to-know principle must always be considered; however, there is also a responsibility to share intelligence. This means exchange of data, information, results, and intelligence to the ones who may require the information. If applicable, the product may have to be written at a different classification level to ensure that the information will get to those who need it; this is called "writing for release", a key concept of coalition operations. There is the duty to share as well as to protect information.

b. Integrated information management, infrastructure, and connectivity enable information sharing, confidence building, and common working practices across communities of interest, including shared review and reporting. Getting NATO nations collaborating and coordinating early is essential. Intelligence sharing is a vital component of this process and must take place between civilian and military intelligence organizations.

c. Intelligence planning is underpinned by a culture of mutual respect and trust. Trust is built through information sharing and associated security measures to protect others' intelligence and balance the risk against insider threats. Practical cooperation should be encouraged to allow collaboration and cooperation across NATO nations and operational partners, both civil and military, while also considering restricting information sharing due to possible counter-intelligence threats.

d. Need-to-know describes the legitimate requirement of a prospective recipient of data to know, to access, or to possess any sensitive information represented by these data. The fundamental security principle is that knowledge or possession of classified information should be strictly limited to those who are cleared to the appropriate security level and who clearly have a need-to-know to carry out their duties. However, because there is also a responsibility to share information with coalition partners, products should be written for release (balancing the need-to-know principle with the responsibility to share).

e. Writing for release at the lowest classification is a skill an analyst must possess and that comes with experience. Information sharing will need to be achieved by a combination of intelligence staff pulling and the proactive pushing of products by agencies and collection assets. What is classified in a specific report may not be what needs to be shared. Understanding how to write for release to contribute to the intelligence community at large needs to be a priority.

f. Reports requested for release or that need a tear-line written are the responsibility of the foreign disclosure officer (FDO). The FDO and theatre disclosure officer are the primary points of contact within the SOCC J2 for all matters related to the disclosure of national and NATO or MISSION SECRET classified intelligence and material. National caveats, bilateral agreements, and varying classification markings are frequently an impediment to the timely sharing and operational use of intelligence. In some cases, it may be necessary to request a FDO be located with the SOCC or SOTG.

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Chapter 10 – SOF Medical Logistics

Section 1 – NATO medical logistics

10.1 Medical logistics embraces procurement, storage, movement, distribution, maintenance, and disposition of medical materiel and pharmaceuticals, including blood, blood components, and medical gases. Legislation, regulations, and responsibilities related to medical logistics may differ between nations.

10.2 **Medical logistics system.** The medical logistics system (MEDLOG) needs to ensure the sustainability of medical support under all operational conditions. The scale and scope of a MEDLOG will be mission dependent. Planning and executing an effective medical logistics system is primarily a national responsibility. NATO commanders and their medical staff may therefore need to exercise their authority to ensure the best possible and most effective use of national assets and activities in the AOO by coordination. The MEDLOG must be straightforward and reliable, cost-effective, simple and capable of delivering medical supplies rapidly and theatre wide. It must enable national contributions to be self-sufficient from deployment and throughout the duration of the mission, as specified by planning staffs in compliance with the principles of good distribution practice.

10.3 **Interoperability**. Any nation providing support of medical material or pharmaceuticals to other nations is responsible for appropriate storage and transportation until the point of transfer. Key aspects of medical supply facilitating the interoperability among NATO medical services are:

a. Property exchange or replacement of medical non-expendable items (e.g. ventilators, stretchers) at all levels within a theatre of operation that are required to accompany patients during evacuation from the battlefield to the next appropriate medical or dental facility. This materiel must clearly be marked with the nation of origin in plain text, the national flag, or the NATO stock number.

b. The required information on medical supplies, including instructions concerning specific conditions for storage or transportation (humidity or temperature). The date of production and expiry should always be visible.

c. The methods of identification of the contents of syringes, syrettes, containers, and self-injection devices. For self-injection devices, it is imperative that all medical personnel and all users understand the meaning of the colour codes that are used.

Section 2 – SOF logistical support

10.4 SOF medical logistics can present significant challenges for medical support. Because space and weight are limited in SOF units, medical equipment and treatment supplies will compete for space with other operational requirements like food, water, and ammunition. SOF medical equipment and supplies will frequently need to be dual purpose and capable of easy disposal, must withstand the extremes of temperature and field conditions, and be simple to use in high pressure situations. For this reason, SOF frequently rely on off-the-shelf technologies

specially designed for the SOF environment that are not common to the conventional medical supply distribution chains of most nations. The flexibility to procure and the authority to use these items require senior medical leadership involvement and are critical to maintaining the edge that gives SOF units the advantage over large forces. This may be particularly true in the austere environment over prolonged evacuation timelines where blood products are required. SOF units may need specific waivers from national and legal authorities to use products or protocols such as whole blood transfusion if they are to save lives in this challenging environment.

10.5 Since most nations do not have SOF specific logistic chains of supply, SOF medical logistics will frequently rely on the conventional MEDLOG for procurement and resupply of non-SOF specific items such as medication, bandages, and other routine medical supplies. SOF medical planners should coordinate with SOF J4 during early stages of the Crisis Response Planning Process or during the high-level planning phase to facilitate the development of the LOG-MED Concept of Support to sustain SOF activities. J8 can support with financial solutions to mitigate conventional logistic gaps or in case of stand-alone SOF missions.

Section 3 – Medical logistics

10.6 Under a NATO umbrella, medical support is the responsibility of the SOF commander, typically the SOCC framework nation. However, the planning and execution of medical logistics is the national responsibility of the troop contributing nations. To support medical planning, NATO *Allied Joint Doctrine for Logistics*, (AJP 4) provides two major elements.

a. A menu of opportunities to bridge some of the challenges and risks to the planning and execution of medical logistics.

b. A common understanding of NATO terminology to standardize how operations should be conducted under NATO framework.

Section 4 – Medical enablement

10.7 Medical logistics is enabled by planning for support via one or a combination of the following five mechanisms:

a. Self-support (organic capability).

b. Support from conventional forces, response forces, battlegroups, and multinational corps, divisions, and brigades.

c. HN support/non-standard (HN defence force, local commercial/government organizations, pharmacies, private clinics, etc.).

d. Contracted support options (Contracted Support Operations, NATO Support and Procurement Agency, etc.).

e. Other (non-governmental organizations (NGOs)).

Section 5 – Medical supply planning

10.8 Medical supply planning is conducted to support the NATO operational requirements. SOF medical logistics personnel should plan for and ensure that adequate stock levels of medical supplies are maintained, and that resupply of medical items can be conducted when needed (for extended operations in a resource-constrained environment, SOF may require guidance on potential applications of expired pharmaceuticals when no other options are available). Close attention must be paid when planning and the executing the following tasks.

a. **Procurement.** What is the plan for attaining required medical supplies/capabilities?

b. **Movement.**

(1) What is the plan to physically locate supplies/capabilities from origin to final destination?

(2) What are the cross-border requirements?

(3) What medical transport/transit authorities are required?

c. **Storage.**

(1) Special consideration should be given to the provision of **temperature-sensitive blood** and blood components far forward, to be used by the lowest-level SOF operational elements.

(2) What is the security plan for controlled substances/capabilities?

d. **Distribution.** What is the plan to disseminate supplies/capabilities?

e. **Maintenance.**

(1) Once the medical support network is established, what is the plan to secure, reinforce and keep it fully functioning?

(a) What is the plan to maintain and repair capabilities/equipment?

(2) **Disposition.** Special consideration should be given to hazardous materials and disposition of medical waste.

Section 6 – Medical logistics planning

10.9 Medical logistics planning is conducted to project and then sustain SOF medical in support of the NATO SOF operational requirements. Creative logistics solutions can be incorporated into medical logistics planning to set conditions for the efficient and seamless transition from peace to crisis and conflict. NATO opportunities include multinational logistics collective solutions and pre-positioning to reduce costs and footprint and increase force flexibility. Close attention must be placed when planning and the executing the following:

a. **Enablement.** (Has medical enablement, identified above, been validated, assessed and assured in support of the operational requirements?)

b. **Flexibility.** (Is the medical logistics plan scalable with flexibility to seamlessly transition to emerging requirements, as they develop?)

c. **Sustainability.**

(1) Is the medical logistics plan supportable?

(2) What local opportunities can be leveraged?

(3) What are alternatives substitutes for resources/capabilities?

Chapter 11 – Force Health Protection and Preventive Medicine

Section 1 – Force health protection

11.1 FHP comprises all medical efforts to promote or conserve physical and mental well-being, reduce or eliminate the incidence and impact of disease, injury, and death and enhance operational readiness and combat effectiveness of the forces. It encompasses actions to counter the debilitating effects of environment, occupational health risks, environmental and industrial hazards (EIH), disease related, CBRN threats and selected special weapon systems through preventive measures for personnel, systems, and operational formations.

11.2 DNBIs will be an ever-present risk to personnel that very often generate the greatest burden of morbidity upon the deployed force. The primary aim of force health protection is casualty prevention through the robust implementation of comprehensive disease and injury prevention measures and of health protection and surveillance capabilities that will promote, improve, or conserve the mental, behavioural, and physical well-being of the deployed force. FHP will influence operations planning, continue throughout the deployment, and must extend well into the post-deployment period.

11.3 FHP involves:

a. Preventive medicine, environmental health, and veterinary services.

b. Health readiness and health promotion.

c. MI2.

d. Deployment health surveillance, disease, and casualty reporting.

11.4 FHP should be effective and proactive. Medical information and intelligence as well as deployment health surveillance, and disease and casualty reporting have to be considered. Health surveillance and preventive medicine measures must be planned accordingly and implemented from the start of a deployed operation. The health threat surveillance and assessment process must determine the full effect of health threats and provide solutions for how these effects can be eliminated or mitigated.

11.5 Failure or poor implementation of FHP measures may result in a significant decrease of operational readiness and fighting power. To ensure that medical aspects of force protection are properly incorporated into the operational medical planning process and the commander's decision-making, an FHP cell is normally established within the formation headquarters' medical staff, providing advice on how to protect the force against threats to its health.

Section 2 – Preventive medicine, environmental health, and veterinary services

11.6 **Preventive medicine.** Preventive medicine comprises the anticipation, prevention, and control of communicable diseases, illnesses, and exposure to endemic, occupational, and environmental threats. These threats include non-battle injuries, environmental and occupational exposures, WMC, food- and waterborne diseases and intoxications and other threats to the health and readiness of the deployed force.

11.7 **Environmental health and veterinary services.** Environmental health and veterinary services are an integral part of preventive medicine. Environmental health and veterinary services encompass the prevention of zoonotic disease transmission, food and water safety, and field sanitation.

11.8 Preventive medicine aims to mitigate infectious, endemic, environmental, physio-chemical, occupational, industrial, and operational health risks. It covers the following spectrum of key tasks:

a. Identifying risks and threats from terrain, climate, endemic disease, industrial and occupational hazards to the health of all personnel deployed in a specific AOO.

b. Identifying necessary preventive measures and advising commanders on their implementation, to include the development of a theatre policy on immunization and prophylaxis measures, acclimatization and appropriate training of all personnel, especially on measures to prevent food, water, and vector-borne diseases/intoxications.

c. Advising on and auditing the quality of water and food sources.

d. Auditing and supervising implemented measures.

e. Performing vector and pest control.

f. Gathering epidemiological and other medical data and information.

g. Advising commanders on the overall health risks and threats, and the limitations they may place on the campaign by their impact on force readiness.

11.9 Preventive medicine requires specific corresponding (chemical/microbiological) laboratory capabilities. Preventive medicine measures are probably the most essential contribution to force health protection. Their implementation has to start prior to deployment and continue, irrespective of changes in the conduct of the operation, well into the post-deployment period.

11.10 The organization to undertake preventive medicine measures must extend from theatre headquarters down to unit level and below. Its shape and size will be mission- dependant, but will include, as a minimum, advice on individual preventive medicine at every level of operational command.

Section 3 – Preventive medicine services

11.11 Preventive medicine services encompass those activities that are geared toward preventing or reducing the incidence of DNBI. Since SOF personnel are usually deployed into areas where the presence of endemic and epidemic diseases is high, where basic sanitation facilities and practices may not exist, where preventive medicine assets may not be readily available, and where environmental conditions may be adverse, these forces are at a higher DNBI risk. Because few preventive medicine personnel will be available during SOF operations, greater emphasis must be placed on the training and equipping of SOF personnel in small unit and individual preventive medicine knowledge, skills, and capabilities. In SOF units, preventive medicine programmes are actively pursued, and command emphasis is placed on training in preventive medicine measures. The application of these measures is the same for SOF and conventional forces. The SOF support requirements exceed its organic capability. Preventive medicine support must be provided on an area support basis from joint operations area AHS assets. Significant medical information is collected by medical planners to support the intelligence preparation of the battlefield. They can be a good source of information regarding the health threat in the AOO.

Section 4 – Key medical threats

11.12 Threats come in many forms and can be broken down into five main categories.

a. **Diseases.**

(1) Endemic and epidemic.

(2) Food-borne.

(3) Waterborne.

(4) Arthropod-borne.

(5) Zoonotic.

(6) Vectors and breeding grounds.

b. **Occupational and environmental health hazards.**

(1) Climatic (heat, cold, humidity, and significant elevations above sea level).

(2) Toxic industrial materials.

(3) Accidental or deliberate dispersion of radiological and biological material.

(4) Disruption of sanitation services or facilities (such as sewage and waste disposal).

(5) Disruption of industrial operations or industrial noise.

c. **Poisonous or toxic flora and fauna.**

(1) Toxic poisonous plants and bacteria.

(2) Poisonous reptiles, amphibians, arthropods, and animals.

d. **Medical effects of weapons.**

(1) Conventional (to include blast and mild traumatic brain injury/concussion).

(2) Improvised (to include IEDs).

(3) CBRN warfare agents.

(4) Directed energy.

(5) WMD.

e. **Physiologic and psychological stressors.**

(1) Continuous operations.

(2) Combat and operational stress reactions.

(3) Wear of mission-oriented protective posture ensemble.

(4) Stability tasks.

(5) Home front issues.

Section 5 – Preventive medicine measures

11.13 Preventive medicine measures (PMM) are those actions taken to counter the health threat and to prevent DNBI.

a. PMM can be performed at all levels and include the following:

(1) Individual PMM.

(2) Unit field sanitation training and collective PMM tasks.

(3) Unit leadership and the enforcement of all individual PMM and unit collective tasks.

b. PMM should focus on the following areas.

(1) Hot and cold weather injuries.

(2) Insects and animals.

(3) Food and water contamination.

(4) Toxic industrial chemical/materials.

(5) Noise.

(6) Non-battle injury.

(7) Lack of physical fitness.

Section 6 – Deployment health surveillance, disease, and casualty reporting

11.14 Deployment health surveillance aims to provide a key indication of the forces' heath status and an estimate of its impact on manpower and working day losses. Surveillance and reporting may also identify CBRN weapons involvement. Deployment health surveillance is intended to serve as a sentinel warning system to trigger further investigation, implement preventive countermeasures or other command actions needed to reduce the adverse impacts of health threats. A comprehensive disease and non-battle injury analysis can produce more effective PMM, including recommended policy on immunization, prophylaxis, and personal health education. It can also be a driving factor in the size and capability of medical resources required in different scenarios.

11.15 Deployment health surveillance comprises the routine standardized tracking of disease and injury incidence, which includes:

a. Identifying the population at risk.

b. Identifying and assessing potential occupational and environmental health (OEH) hazards.

c. Documenting occupational, environmental, chemical, biological radiological and nuclear health risks or exposures.

d. Monitoring real time health outcomes and reporting DNBIs and battle casualty (BC) rates during the deployment in a timely manner.

e. Investigating suspected disease outbreaks or clusters of illness among deployed personnel.

Section 7 – Health surveillance

11.16 A deployment health surveillance capability (DHSC) with the respective knowledge and skillset to rapidly respond, investigate, and coordinate specific risk management countermeasures could be

critical to mitigate a wide-spread degradation of mission readiness, particularly in suspected or actual outbreaks and illness clusters. Depending on the route of exposure and the degree of susceptibility, illness, or death in local human and animal populations can have an impact on the deployed force. If an HN health surveillance system is still operational, a close collaboration of NATO and the HN's health surveillance system should be supported and implemented, and corrective actions coordinated at all levels.

11.17 A NATO-sponsored deployment health surveillance system (EpiNATO-2) is used in all NATO operations and exercises and is managed by the medical staff of deployed forces at all levels. It allows the chain of command to establish a database of health surveillance information that assists medical support planning for both current and future operations.

11.18 EpiNATO-2 involves the monitoring, collection, and evaluation of illness/injury data on all deployed NATO military personnel who report for medical treatment both on an outpatient and inpatient basis. It is also set to run in conjunction with other national reporting systems.

11.19 Epidemiological data reported to EpiNATO-2 are collated and analysed for command and theatre-level use. Periodic epidemiological analysis and relevant findings are reported as feedback to the reporting units. Medical staff and commanders thus have reliable, quantitative planning and resource allocation data regarding medical support and useful trend analyses by illness and injury category.

11.20 Through the quantitative identification of morbidity causes and qualitative measuring of their effect, the evaluation of both occurrences and consequences is the prime objective of this surveillance system. Findings may then support appropriate response actions, both in the short and long term.

Section 8 – Preventive medical pre-deployment planning

11.21 Effective PM planning is enabled by planning prior to deployment and should cover the following five mechanisms:

a. Physical exams current to handle the skillsets required (military free fall , dive operations, etc.).

b. Immunizations current for national requirements and the JOA.

c. Blood grouping data on file.

d. Ensuring deploying personnel have the appropriate materials, to include ear and eye protection, health alert tags, and personnel medications, to cover the duration of the deployment.

e. Other (NGOs).

Chapter 12 – Comprehensive Defence

Section 1 – Introduction

12.1 Comprehensive defence is an official government strategy, which encompasses a whole-of-society approach to protecting the nation against potential threats. This chapter is intended to give you a general understanding of the concept of comprehensive defence. As development and evolution of comprehensive defence continues, SOF medical support may possess a unique skillset and perspective that could significantly contribute to these efforts.

a. National and international means, methods, and legalities for developing and sustaining comprehensive defence are dependent on each unique nation and Alliance partner while also in consideration of other governmental and non-governmental systems and resources.

b. Key reference for comprehensive defence application and strategy is provided in the SOFCOM *Comprehensive Defence Handbook*, Volumes I and II, which have been developed to provide tools and checklists for comprehensive defence implementation.

(1) Volume I provides considerations for governments when enabling members of the public to participate in comprehensive defence.

(2) Volume II provides a template which, when tailored to a nation's needs, can be used to inform the average member of society of ways that they can contribute to comprehensive defence.

(3) The SOFCOM Comprehensive Defence Handbook, comprehensive defence course, and tabletop exercise are three of the means used by SOFCOM to achieve preparation goals.

Section 2 – Principles

12.2 Comprehensive defence is considered a national responsibility, Article III treaty obligation, and a collective concern.

12.3 Reducing vulnerabilities through civil preparedness, across all hazards, builds resilience and supports collective defence and deterrence Alliance-wide.

12.4 Close civil-military cooperation is considered an essential element of successful comprehensive defence.

12.5 Complex crises require a combination of non-military and military tools, many vital resources are held by the civilian sector, including medical, food, and energy-related stockpiles.

12.6 Civilians can be active in ensuring their own safety, the safety of those around them, allowing military forces to focus on the immediate security concern.

12.7 These principles should be considered when designing or adjusting comprehensive defence structures.

a. **Whole-of-society inclusion.** To the greatest extent possible, organizational structures shall allow private and civic sector support and/or integration.

(1) This needs to be transparent and broadly communicated (not compartmented in a plan that only a few members of the government know about) and rehearsed (you are not going to include the entire nation in a crisis response exercise, but as many private and public aspects as possible should be incorporated).

b. **Oversight.** All comprehensive defence organizations and activities shall be pre-planned and officially sanctioned in accordance with nation's laws and policies.

(1) This absolutely necessitates an evaluation of existing laws and possible legislative adjustments. If this aspect is neglected, national authorities may lose control of their citizenry in times of crisis and make the situation far worse.

c. **Multilayered.** All components of comprehensive defence will be integrated to form a coherent, multilayered deterrence and response system.

(1) In military terms, this is interoperability and synchronization. Roles and functions of all key players need to be clearly defined and understood, and developed in a way that they are mutually supportive—an example would be private sector support to government during essential services disruption (food, water or telecommunications) disruption.

d. **Multifunctional.** Supported by laws and policies, each comprehensive defence element shall be designed to protect against all widest range of threats possible.

12.8 When developing a national comprehensive defence approach, each component needs to be evaluated across the contingency spectrum, from natural disasters, terrorism, external hybrid actions by an adversarial state, or full-scale armed conflict.

12.9 Comprehensive defence is not limited to SOF, military, or government practitioners. A whole-of-society network is key, with SOF serving as an interlocutor and force multiplier in this network. Early SOF employment (as well within non-military entities) in competition and crisis is essential for success in either crisis or conflict.

12.10 Potential SOF tasks in comprehensive defence include:

a. Liaison functions with private and civic sector organizations.

b. Advising and assisting non-military government agencies.

c. Conducting critical infrastructure assessments—looking for weaknesses that could be exploited by the enemy.

d. Training conventional force in MA; conventional force then trains assigned home guard elements.

e. Recruiting, assessing, and training asymmetric defence component (ADC) elements.

f. Leading ADC elements.

12.11 Civilians could have a role in ensuring national continuity and powering civil mobilization and could be a powerful asset in the competition for information and messaging.

12.12 Defined NATO understanding and focus on resilience (through the seven baseline requirements) is an intense and systematic effort since 2014.

12.13 Concrete tools and guidance have been developed to support national authorities (including resilience guidelines, evaluation criteria, sectoral guidance (e.g. catastrophic mass casualty planning).

a. Support national and NATO efforts to build and/or improve whole-of-society defence capabilities.

b. Support education and training for Allies and partners.

c. SOFCOM encourages participation from across government, private sector, and societal groups involved in civil defence.

12.14 Civil-military relationship is not a question of taking over but of collaboration.

12.15 Ensure robust logistical efforts, which will require innovation.

12.16 Reinforced appreciation for decentralized actions and autonomous efforts at every level.

12.17 NGOs in comprehensive defence preparations and policies:

a. Composed of different organizational models with differing priorities.

b. Respond to the needs of the people with respect to international humanitarian law.

12.18 The following are NGO considerations for involvement in events:

a. Accessibility.

b. Security.

c. Legal.

12.19 NATO community networks need to facilitate development of civil defence/all crisis medical response for resilience.

a. This will require a working understanding of civilian systems for integration—use existing medical networks and efforts, i.e. NSOCM/NSOMT, V4.

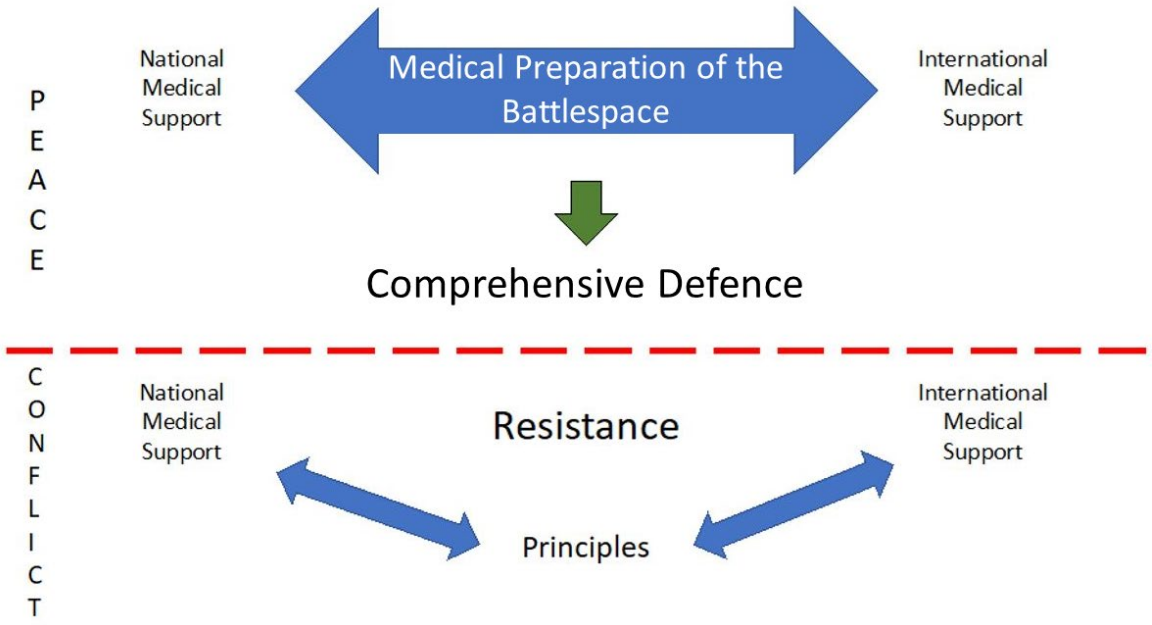

Figure 12.1 – Comprehensive Defence Comparisons

Section 3 – Asymmetric warfare and resistance

12.20 Resistance is a sovereign government's natural response when faced with a threat to its sovereignty and independence and is distinguishable from terrorism, insurgency, or revolution.

12.21 Asymmetric warfare, or resistance operations, does not have NATO doctrinal terminology or interpretation, a variety of terms references and interpretations are available across the Alliance.

a. SOFCOM currently lacks medical interoperability for asymmetric warfare.

b. Phase 0 preparation and Alliance interoperability is critical for optimal medical support.

12.22 There is absolute linkage between resistance potential and comprehensive defence.

a. A key point is linking national and international support to resistance, based on national principles of employment for asymmetric warfare.

b. Existing and previous partner civil defence/crises plans will assist in future requirements.

12.23 Due to the clandestine nature of asymmetric warfare, critical judgement must be applied in the education and development of knowledge, skills, and capabilities.

Section 4 – Asymmetric warfare principles

12.24 Operational principles for resistance operations are simplicity, flexibility, and mobility.

12.25 The four elements of resistance are:

a. **The underground.** The most covert branch, the underground, conducts intelligence, media and propaganda, and sabotage and subversion activities.

b. **The auxiliary.** Provides active support to resistance operations to include security, medical support, and manufacturing of logistical needs.

c. **The guerrilla force.** Active warfare element based on structure and techniques of organized military formations and under lawful control of a legitimate exiled or shadow government. Due to the limitations of the resistance environment and terrain, tactics are usually restricted to small scale raids, ambushes, and harassment never intending to become engaged with an enemy force.

d. **Public components.** Functions as overt, political, and/or support organizers national representatives while not the same with a shadow government or government in exile.

12.26 A key point is linking national and international support to resistance based on national principles of employment for asymmetric warfare.

Section 5 – Medical considerations

12.27 Medical support is an important enabler to asymmetric warfare.

12.28 Operationally, casualties in resistance operations are more a tactical and security problem than a care or patient issue.

12.29 Casualty and treatment decisions are most often criteria and conditions based.

12.30 Resistance operations increases in risk from any other SOFCOM mission, increased by the civilian/military dynamics involved.

a. Medical standards of care, evacuation, and loss will be different.

b. Field medical skills will be more advanced.

12.31 Area study and mission analysis are critical to international medical support to resistance operations.

12.32 Existing and previous partner civil defence/crises plans will assist in future requirements, especially if established, developed, and rehearsed in comprehensive defence.

12.33 Traditional medical standards will be compromised comparably due to austere operational conditions and security requirements of resistance operations; improvised and primitive medicine may be a reality.

a. Plan to communicate and educate a difference in care, recommend using national crises dynamics and perspectives as an example.

12.34 Ensure medical support is involved in planning and preparation for resistance operations.

12.35 Internal resistance support requirements and external resistance operations medical support requirements are different and require understanding and coordination between the two efforts.

12.36 Specific mission capabilities will take time for development in selection, training, and sustainment; specialized training is required in both operational and medical realms.

12.37 The majority of casualty care will be provided by internal resistance assets.

12.38 Medical systems development in asymmetric warfare are just as important as therapeutic capabilities.

12.39 Consider using SOF principles and SOF medical doctrine as a design for resistance medical support systems.

12.40 Key skills and capabilities for medical care in asymmetric warfare include:

a. Preventive medicine and field sanitation.

b. Medical treatment and care.

(1) Point of injury.

(2) Treatment centres.

(3) Rehabilitation/convalescent services.

12.41 Take advantage of MA missions, humanitarian assistance, and disaster relief for asymmetric warfare skills training.

12.42 The present SOST design for international or external support will have low impact and low survival in the resistance environment, surgical assets should be task organized based on

mission analysis. However, the present SOST design and principles may be used for national resistance support.

12.43 SOFCOM requires improved interoperability in terminology and understanding for evaluating and communicating medical risk to the commander (standards, capabilities, interoperability).

Section 6 – Comprehensive defence planning considerations

12.44 Items to consider when planning for operations in collective defence throughout competition, crisis, and conflict (C3). Planning considerations to support SOF medical personnel in developing sound medical plans to support SOF operations within a collective defence scenario include:

a. Medical command and control.

b. Medical planning and preparation.

c. Ongoing optimal triage and prolonged field care (PFC).

d. Doctrinal role employment and principles of SOST.

Section 7 – Medical command and control

12.45 **Competition.**

a. Educate operational and tactical commanders on medical aspects.

b. Demand guidance on role of SOF in major joint operations (MJOs).

c. Prepare NATO/European Union (EU)/SHAPE/SOFCOM strategic medical policies and agreements.

d. Identify medical capability requirements for SR, DA, MA for each phase of C3.

e. Identify medical tasks in support of the strategic mission.

f. Support all planning developments with medical input as required.

g. Develop MROE and planning guidelines reflecting planning development scenarios.

(1) Guidelines for civilian casualties, refugees, prisoners of war (POWs)/ detainees, enemy medical personnel.

(2) Protocols for emergency treatment, MEDEVAC, general healthcare.

h. Develop and implement clear medical C2 structure with adequate, redundant lines of communication/information flow.

i. Define C2 interfaces between SOF and conventional medical structures.

j. Coordinate collection and integration of medical data on casualties treated within the SOF medical system into the national and/or NATO trauma register.

k. Introduce medical scenarios stressing decision-making process at operational level into exercises (maximal stress to system in order to identify breaking points).

l. Consider different situations based on nation.

m. Defend medical information management systems against sabotage.

n. Integrate military-civilian medical systems.

o. Use of near-abroad approach?

p. Integrate with SOF units of countries at risk (per regional plans).

q. Adjust operator performance programmes.

r. Evolve TCCC for SJO/MJO requirements.

s. Engage NGOs in preparation.

t. Establish priorities in standardization.

u. Use proper command assets and resources.

12.46 **Crisis.**

a. Establish regular communication with designated counterparts (land component commander (LCC), MCC, air component commander (ACC), JFC, NGOs, civilian health care).

b. Activate identified medical readiness levels.

c. Test the measures planned in competition phase and modify as required (contingency plan development).

d. Adapt the plan to apply to region and risk (additional details).

e. Increase defence of information management.

f. Develop specific plans to insert medical personnel and supplies in denied areas.

g. Enhance HN SOF capabilities.

h. Increase efforts to build local medical support network.

i. Ensure specific treatment and MEDEVAC (forward/tactical/strategic) plan and identify:

(1) Required/available assets.

(2) Roles and responsibilities.

(3) Theatre return to duty policy.

(4) Refined MROE.

j. Identify plan to replace medical personnel and supply (wounded in action (WIA)/killed in action (KIA)/rotation).

12.47 **Conflict.**

a. Execute plan and feedback system.

b. Establish battle rhythm (regular situation reports (SITREPs), etc.) and reporting system to allow for adequate medical C2.

c. Integrate in conventional medical C2 structure as planned.

d. Identify SOF-HN services interfaces.

e. Be prepared to execute quick personnel and supply replacement.

f. Record casualty care.

g. Prepare post conflict stability.

Section 8 – Medical planning and preparation

12.48 Establish titles, authorities, and memorandums of agreement.

12.49 Build relationships.

12.50 Participate in exercises.

12.51 Build medical COP.

12.52 Develop a generic plan for casualty flow and medical logistic support inside and outside the JTF AOO.

12.53 Ensure lines of communication.

a. Along medical and military C2 lines.

b. Encourage SOF medical personal on all levels to directly engage with relevant conventional medical assets to ensure high interface functionality.

(1) Regional PECC for forward and tactical evacuation.

(2) Relevant conventional MTFs that are likely to receive SOF casualties.

(3) Relevant conventional MEDEVAC assets that are likely to support SOF operations.

12.54 Integrate J Codes for medical systems and requirements.

12.55 Facilitate NGO operations, integration, and support.

12.56 Understand missions across the conflict spectrum.

12.57 Maintain SOF creativity and flexibility.

12.58 Determine SOF casualty integration in evacuation systems and how to facilitate.

12.59 Validate required standardization requirements.

12.60 Recognize the 10-1-2 NATO timelines of care will not be realistic.

Section 9 – Ongoing optimal triage and prolonged casualty care

12.61 **Competition.**

a. Support with input and prepare NATO/EU/SHAPE/SOFCOM medical policies and agreements about PFC concept.

(1) Proper interoperability between:

(a) SOF and conventional medical community.

(b) Military medical and civilian medical community.

(2) Goal: Place the concept into Allied doctrine/s: e.g. AJP-4.10 and AMedP-4.13.

(3) Need for extension of existing doctrines (e.g. MEDLOG; MEDEVAC) with PFC-related points.

b. To serve as basis for national legislation (especially field transfusion policies).

c. Develop education and training concepts and standards.

(1) Throughout the entire doctrine, organization, training, materiel, leadership and education, personnel and facilities-interoperability (DOTMLPF-I) spectrum.

(2) Appropriate for SOF and conventional community (both commanders and MEDADs).

(3) Involvement of civilian community.

d. Identify role approval for PFC. Who has PFC in their scope?

e. Develop CPGs for PFC and additional trauma surgical skills for MJOs.

f. Publish PFC skill list adapted to MJO (more casualty numbers, increased evacuation time).

g. Create Interoperability between civilian, military, and NGOs.

h. Create international approval for PFC legal protection covering the scope of practice of medical care providers.

i. International humanitarian laws regarding medical care, i.e. taking care of foreign nationality or in international waters.

j. Advocate national legislation, interoperability guidelines, i.e. blood products.

k. Expand the scope of practice in case of ‘stay behind, no evacuation’.

l. Create a system for a 24-hour reach-back plan in any operation (U.S. system, advisory).

m. Develop medical intelligence for MJO.

12.62 **Crisis.**

a. Conflict medical training:

(1) Regular based AND.

(2) Pre-deployment.

b. Every NSOCM (or equivalent non-medical personnel with advanced medical training) should be trained to some level of PFC.

c. Organize and conduct PFC in joint exercises.

d. Legal protection covering the scope of practice of medical care providers.

e. Emergency funds for logistical medical resupply and personnel (buy drugs, payment medical procedures).

f. Guidelines on how to inform the civil society about the higher casualty rate and expected mortality rate.

g. More likelihood of PFC.

(1) Guidelines for cross-train with other actors.

(2) Civilian and conventional with improvised supply and procedures.

12.63 **Conflict.**

a. **Tactical level.**

(1) Documentation and reporting.

(2) Observations and lessons learned.

b. **Strategic level.**

(1) Strategic requirements concerning the following:

(a) Guidance and MROE

(b) Legal protection concerning the scope of practice of medical care providers.

(c) Expand and prepare scope of PCC including cross training within units and with partners prepared for the MJO environment.

(d) Prepare juridical cover and support for the use of PCC; allowing SOF to save lives.

(e) Allow and train the use of improvised medicine and improvised evacuations during MJO.

Section 10 – Doctrinal role employment and principles of special operations surgical teams

12.64 Create more SOSTs.

12.65 Develop and refine tactical skill list for MJO based on specific employment scenario (FOB, far forward, clandestine operations).

12.66 Develop a plan to improve austere medical skillsets.

12.67 Describe and define a baseline for SOST capabilities that is scalable and modular to support different scenarios (high casualty flow for extended period of time vs. support to short missions).

12.68 Prepare SOSTs for embedding in existing conventional and civilian medical infrastructure in defined AOO.

12.69 Analyse feasibility of prepositioning medical stores for SOSTs.

12.70 Construct a SOST working group to share and develop information and preparation.

12.71 Develop research questions for SOST function in MJO.

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Chapter 13 – Human Performance Programmes

Section 1 – General

13.1 Human performance programmes (HPPs) improve and preserve unit operational readiness as well as individual operators and supporters. HPPs should be a unit sustainment function with requirements for support before, during, and after mission execution. This is similar to how medical support requirements persist during all operational phases to include recovery. Significant overlaps between HPPs and medical support requirements exist; however, HPP also contains distinct non-medical features. Therefore, the term human performance system may more accurately describe the HPP end state.

13.2 Broadly speaking, there are two major elements of an HPP—physical and mental readiness, both of which contain further subdivisions into various subcomponents. The line between the components that fall under physical versus mental readiness can be blurry at times, but this does not change the end goals of improving readiness while reducing adverse occupational effects on health and well-being. Injury prevention and optimal rehabilitation can accelerate return to duty after injury and prolong the operator's lifecycle. An HPP can never mitigate the negative impacts on performance caused by lifestyle and environmental factors (e.g. chronic sleep deprivation, poor diet, excessive alcohol intake, lack of recovery time, or poor leadership).

Section 2 – HPP Purpose and Goals

13.3 Since SOF operators and enablers are a limited asset that cannot be mass-produced, investment in human performance is of utmost importance. Development of an HPP is ultimately a national responsibility that requires command prioritization and engagement. After initial development, a quality HPP enters a continuous process of reassessment and refinement to meet organizational and individual goals during all phases of an operation: pre-deployment, deployment, and post-deployment.

13.4 The five major goals of such an HPP are:

a. Injury prevention.

b. Optimized/enhanced job performance.

c. Accelerated return to duty after injury.

d. Increased operator lifecycle.

e. Reduced long term health implications.

13.5 Planning, implementing, or adapting an HPP takes time, subject matter expertise, and resources. It must always include a thorough needs analysis of specific factors currently interfering with human performance goals. HPPs will always be a compromise between

operational requirements, end user preferences, and current sports performance research. It is therefore essential to include operators as well as command representatives in the planning process. Without strong command support or operator buy-in, the programme will fail.

13.6 Human performance optimization is a holistic, multi-professional approach and not an exclusive medical responsibility. Human performance falls in multiple intersections between medical and non-medical oversight, between sports performance and injury recovery, between civilian and military subject matter expertise, and finally between hard medical science and performance industry cultures and practices. It is therefore important to consider all available components in programme design, even if human performance is not their primary function (e.g. spiritual/religious advisors, social workers, SOF medics, etc.). Components relevant to a functioning HPP are shown in Figure 13.1.

Section 3 – HPP considerations and potential limitations

13.7 There should be defined and established relationships for all parties involved with the HPP. Different professions (e.g. physical training instructors/strength coaches, athletic trainers, physical therapists, mental performance specialists, psychologists, medical professionals, nutritionists, chaplains, social workers) must closely cooperate and coordinate, but also respect professional boundaries. Bringing the various professionals together as a cohesive team will require an HPP coordinator to provider overall direction. There is no requirement that the HPP coordinator have a specific professional background, but it is recommended that they have working knowledge of the HPP domains and possess the leadership ability to coordinate a multidisciplinary team. It must be stated, however, that despite these competing intersects, an HPP must always have physician oversight as part of the team.

13.8 SOF HPPs must address the unique characteristics of SOF culture and operational challenges. Commercially available “off-the-shelf” solutions or conventional HPPs rarely address the specific needs of SOF organizations, as SOF operators are specially selected and trained for certain physical and mental attributes and HPP efforts must reflect the specific unit's mission. SOF HPP staff must therefore have a comprehensive understanding of SOF culture and operational requirements within the organization. For this reason, successful SOF HPP team members, particularly those from non-SOF backgrounds, must possess strong interpersonal skills coupled with professional expertise and experience.

13.9 It is acknowledged that HPP budgets, in terms of recurring personnel cost and initial equipment costs are not insignificant. However, when weighing the value of force preservation against the costs of training new personnel, coupled with the organizational knowledge and experience lost with SOF turnover, HPPs will be found to be financially self-sustaining. It is also acknowledged that the pursuit of funding and facilities for the ideal programme should not impede the implementation of a programme with available assets within each national SOF. For instance, a SOF unit may have high quality physical therapy and psychological care available through existing means external to their HPP but lacks strength in coaches and nutrition resources. While not ideal, an HPP with limited resources in this situation may seek to create a blended programme by hiring only what is required to fill the gaps in available resources by establishing formal or informal relationships with available resources.

13.10 On the subject of cultural competency, particularly in the areas of psychological support and nutrition care, national-level HPP efforts will better capture both the national culture and the SOF culture within that nation. There is no 'one size fits all' solution for HPPs and while some nations have matured and have well-funded HPPs, this does not mean that their exact model is correct for all nations. HPPs must be tailored to the needs of the organization and the individuals it serves.

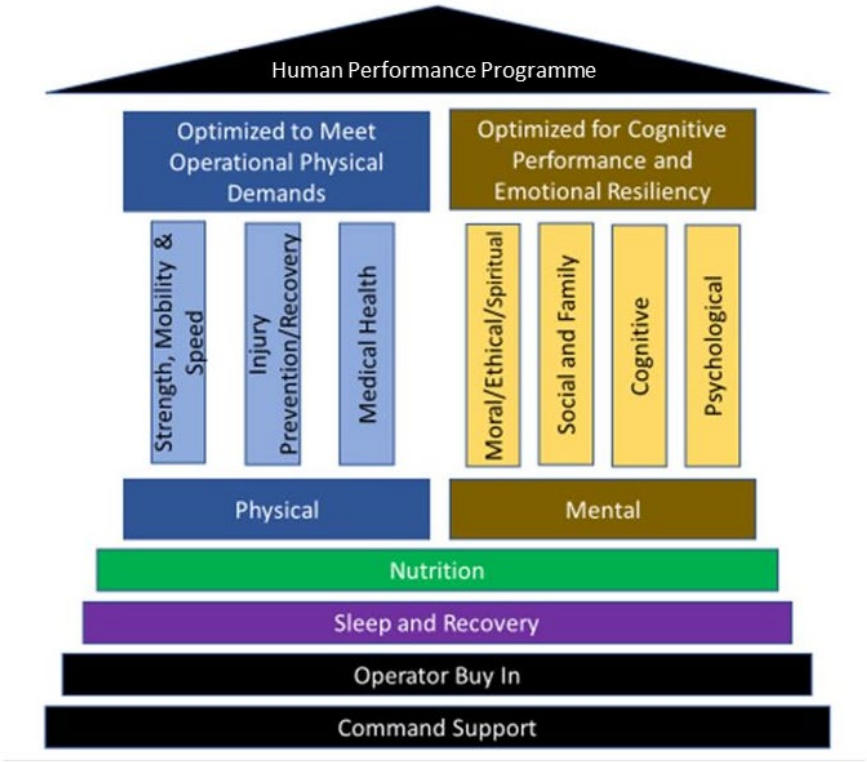

Figure 13.1 – HPP Components

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Lexicon

Part 1 – Acronyms and abbreviations

ACC	air component commander
ACLS	advanced cardiac life support
ACO	Allied Command Operations
ADC	asymmetric defence component
ADCON	administrative control
AJP	Allied Joint Publication
AOO	area of operation
ASC	all-source centre
ATLS	advanced trauma life support
BAP	biological agent protection
BC	battle casualty
BLS	basic life support
C2	command and control
C3	competition, crisis, and conflict
CASEVAC	casualty evacuation
CBRN	chemical, biological, radiological and nuclear
CBRNE	chemical, biological, radiological, nuclear and explosives
CCATT	critical care air transport team
CCP	casualty collection point
CIP	Common intelligence picture
CLS	combat lifesaver
CMC	combat medics/corpsmen
COA	course of action
COM	commander
COMEDS	Committee of Chiefs of Medical Services
COP	common operating picture
COPD	Comprehensive Operational Planning Directive
CPG	critical practice guideline
CPP	combat paramedic/provider
CRESS	conscious level, respiration, eyes, skin, secretions
CUF	care under fire
D&G	direction and guidance
DA	direct action

DCS	damage control surgery
DCR	damage control resuscitation
DNBI	disease and non-battle injury
DOTMLPF-I	doctrine, organization, training, materiel, leadership and education, personnel and facilities-interoperability
DSO	director special operations
EEI	essential elements of information
EIH	environmental and industrial hazards
EOD	explosive ordnance disposal
EU	European Union
FAST	Focused Assessment with Sonography in Trauma
FDO	foreign disclosure officer
FFP	fresh frozen plasmas
FHP	force health protection
FMP	full mission profile
FOB	forward operating base
FW	fixed wing
HHA	health hazard analysis
HN	host nation
HPMK	hypothermia prevention and management kit
HPP	human performance programme
HPW	high performance waveform
HRO	hostage release operation
HSS	health service support
HUMINT	human intelligence
I&W	indications and warning
ICPP	intelligence collection and processing plan
IED	improvised explosive device
IFAK	individual first aid kit
IMINT	imagery intelligence
IMS	international military staff
IPB	intelligence preparation of the battlefield
IR	intelligence requirement
IRM&CM	intelligence requirement management and collection management

J2	intelligence directorate
JFC	joint forces command
JMED	Joint Medical Directorate
JOA	joint operating area
JPR	joint personnel recovery
JTF	joint task force
KIA	killed in action
LCC	land component commander
LOS	line of sight
MA	military assistance
MARC2H3-PAWS-L	massive haemorrhage/MASCAL, airway, respirations, circulation, communications, hypo/hyperthermia and head injuries, pain control, antibiotics, wounds (including nursing and burns), splinting, logistics
MAR2	(MOS) administrative retention review
MARCHE[2]	See Table 8-1.
MASCAL	mass casualty
MASINT	measurement and signature intelligence
MC	Military Committee
MCC	maritime component commander
MCM	medical countermeasures
MCO	major combat operation
ME	medical engagement
MEDAD	medical advisor
MEDDIR	medical director
MEDEVAC	medical evacuation
MEDINT	medical intelligence
MEDLOG	medical logistics system
MEDSEM	medical seminar
MI2	medical intelligence and information
MISCAP	mission capability
MIST	Mechanism of injury, I – Type of Injury, S – Signs, and T – Treatment
MJO	major joint operation
MMP	military medical partnership
MOE	measure of effectiveness
MOP	measure of performance
MOS	military occupational specialty
MROE	medical rules of engagement

MTF	medical treatment facility
NATO	North Atlantic Treaty Organization
NDPP	NATO defence planning process
NGO	non-governmental organizations
NIC	national intelligence centre
NIFC	NATO Intelligence Fusion Centre
NSOCM	NATO special operations combat medic
NSOMT	NATO special operations medical technician
NSHQ	NATO Special Operations Headquarters (now SOFCOM)
NSOU	NATO Special Operations University
OPCON	operational control
OPLAN	operations plan
OPP	operations planning process
OPSEC	operations security
OSINT	open-source intelligence
PALS	paediatric advanced life support
PAPR	powered air purifying respirator
pBRC	packed red blood cells
PCC	prolonged casualty care
PDSS	pre-deployment site survey
PECC	patient evacuation coordination cell
PFC	prolonged field care
PIR	priority intelligence requirements
PMM	preventive medicine measures
PMR	patient movement request
PoI	point of injury
POW	prisoner of war
PPE	personal protective equipment
RCC	recompression chamber
REBOA	resuscitative endovascular balloon occlusion of the aorta
RFI	request for information
SACEUR	Supreme Allied Commander Europe
SALUTE	size, activity, location, unit, time, and equipment
SAR	search and rescue
SATCOM	satellite communications

SCBA	self-contained breathing apparatus
SERE	survival, evasion, resistance, and escape
SHAPE	Supreme Headquarters Allied Powers Europe
SIR	specific intelligence requirements
SITREP	situation report
SME	subject matter expert
SOATU	Special operations air task unit
SOCC	special operations component command
SOF	special operations forces
SOFCOM	special operations forces command
SOP	standard operating procedure
SORT	special operations resuscitation team
SOST	special operations surgical team
SOTG	special operations task group
SOTU	special operations task unit
SR	special reconnaissance
STRATAIRMEDEVAC	strategic air medical evacuation
TACON	tactical control
TCCC	tactical combat casualty care
TTP	tactics, techniques, and procedures
VBSS	visit, boarding, search, and seizure
WIA	wounded in action
WHO	World Health Organization

Part 2 – Terms and definitions

Key Term	Definition	Source
Amphibious operation	A military operation launched from the sea by a naval and landing force embarked in ships or craft, with the principal purpose of projecting the landing force ashore tactically into an environment ranging from permissive to hostile.	NATOTerm
Chemical agent	A chemical substance which is intended for use in military operations to kill, seriously injure, or incapacitate personnel through its physiological effects. The term excludes riot control agents, herbicides and substances generating smoke and flame.	AMedP-7.1
Contaminated casualty	A casualty that has been exposed to a persistent CBRN agent, externally, internally or in a wound, that remains or may be a secondary hazard to responders and is symptomatic.	AMedP-7.1
Contaminated person	An individual that has had a hazardous substance introduced to them but is asymptomatic.	AMedP-7.1
Decontamination	The neutralization and/or removal of a hazardous substance from an area, piece of equipment, or person.	AMedP-7.1
Maritime operation	An action performed by forces on, under, or over the sea to gain or exploit control of the sea or to deny its use to the enemy.	NATOTerm
Nuclear weapon	A complete assembly (i.e. implosion type, gun type or thermonuclear type) in its intended ultimate configuration which, upon completion of the prescribed arming, fusing and firing sequence, is capable of producing the intended nuclear reaction and release of energy. In terms of casualty care, this will cause a combination of trauma, due to thermal, blast, penetrating and blunt injuries, and radiation casualties.	AMedP-7.1
Radiological dispersal device (RDD)	This is a device that causes the overt or covert deliberate spread of radioactive material for the purpose of causing either irradiation, contamination, psychological effect or combination. Some devices may also be dispersed by an explosive device (‘dirty bomb’).	AMedP-7.1

Key Term	Definition	Source
Toxic industrial materials (TIM)	TIM is a generic term for toxic or radioactive substances in solid, liquid or gaseous form. These may be used, or stored for use, for industrial, commercial, medical, military, or domestic purposes. TIM may be chemical, biological, or radioactive and described as toxic industrial chemical (TIC), toxic industrial biological (TIB) or toxic industrial radiological (TIR).	AMedP-7.1
Weaponized biological agent	A biological agent that is deliberately used to produce disease or death in humans, animals, or plants, or which produces materiel deterioration. The biological agent may be a live microorganism (bacteria, virus, or fungus) or a toxin.	AMedP-7.1

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